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ABSTRACT

Contained in this publication are project descriptions and evaluative assessments made by a team selected to critically examine vocational education projects in operation during the 1971-72 school year. The projects were designed to attain one of these four basic goals: (1) Provide career development activities utilizing various models, (2) Develop vocational curriculums of an individualized nature, (3) Develop innovative techniques which serve to motivate students to enroll in school and take some steps toward a tentative career goal, and (4) Design and implement staff development activities. Since the innovative programs were continuations or expansions of previous years' activities or were projects which were late starting, total impact assessments were not made. However, there are plans for doing this during the 1972-73 interim period. (SN)

EVALUATION OF VOCATIONAL EDUCATION PROJECTS 1971-1972

DEPARTMENT OF INSTRUCTIONAL SYSTEMS RESEARCH

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Introduction

This is the first year in which a professional systematic evaluation of the programs supported by funds under the Vocational Education Act of 1968 has taken place. In order to accomplish this task, four individuals were appointed. Their responsibilities have been divided among projects designed to attain the following goals:

1) To provide career development activities utilizing various models,

2) To develop vocational curricula of an individualized nature, especially for special education students,

3) To implement staff development activities, and

4) To provide some innovative techniques to motivate students to remain in school and take some steps toward a tentative career goal.

As a first step in the evaluation, for the most part, the results of these projects are described in terms of the degree to which their enabling objectives have been attained.

In general, projects for the 1971-1972 school year were implemented in two time frames.

1. Some projects were continuous and/or expansions of previous years' activities and encountered few problems in commencing on the target dates set.

2. Other projects encountered severe personnel and equipment difficulties and did not begin until mid-year. Consequently, the quantity of service which was provided to faculty and students differed widely from project to project despite the uniform starting date across projects. Therefore, while some few projects have been in operation for more than one year, the impact of these projects upon the total vocational education program cannot yet be assessed.

However, a long-term goal of the evaluation teams will be to determine the impact of the entire career education program upon students. As these various career development models emerge from a more formative to a summative stage of development, the ability to determine their impact and the interrelationship among the various projects will be examined. It is hoped that during the 1972-1973 school year vital questions dealing with the impact of all career education upon students in the School District of Philadelphia will be determined.

DEVELOPMENT OF AN INDIVIDUALIZED INSTRUCTIONAL PROGRAM UTILIZING A BUSINESS SKILLS LABORATORY
(Project Number 1)

Project Area: Business Education

Project Director: Arthur Hertzfeld

Project Manager: Arthur Davis

Locations: Kensington High School, Bartram High School, and Roxborough High School

Number of Students Served: Approximately 200

Official Proposal Number: 01-4/10-1191

Starting Date of Project: May 1, 1970

Category: Part B - Disadvantaged

The Project

By 1975, it is estimated that the number of clerical and kindred office workers will be increased by 33.1% (Occupational Outlook Handbook, 1970-1971 Edition, p. 272). Nationally, this has been the fastest growing occupational group since 1900. It represents the second-largest occupational group in the nation and the largest group in the Philadelphia metropolitan area.

In spite of the efforts made by vocational schools and business educators to prepare students for this occupation, many of the inner-city students enrolled in such programs fail to attain entry-level skills. One could hypothesize that these students fail because their high incidence of absenteeism, truancy, and dropouts which are symptomatic of urban education may contribute to difficulties in developing an in-depth training program with enough continuity to produce workers with salable skills.

It is possible that if students are given an opportunity to proceed at their own pace within an individualized instructional program, they might be able to experience success and thereby be motivated toward regular attendance, improved attitudes, increased interest in school and improved performance in basic skills. Therefore, the current project attempts to meet the needs of the individual learner rather than attempting to fit the learner into an existing program. It was believed that this approach would help to remediate the above-stated problems.

The pilot program was developed in Kensington, Bartram and Roxborough High Schools which are characterized by high incidences of absenteeism, truancy and student dropout.

Objectives

1. To reduce absenteeism and lower dropout rates.

2. To improve computational skills of participating pupils.

3. To develop competency in the operation of selected business machines.

4. To improve oral communication through the use of the tele-trainer as well as other media.

Observations and Findings

This project, despite delays at two of the three sites, has been functioning effectively according to the goals which have been established.

Observations at these sites have indicated that the individualized instruction mode is an effective technique for maintaining student interest and motivation. Discontinuity of learning experiences caused by absence is avoided. Students upon their return may continue at the same place left off. One could hypothesize that this technique may produce less learner frustration.

The dropout rates among the participants has been minimal. Out of a total of 125 students, only 7 students dropped out (6%). While such small samples cannot be compared with the overall school dropout rates, it is interesting to note that they are far lower than the schools' dropout rates of 23.9% for Kensington, 12% for Bartram, and 11% for Roxborough.

Objective 1. Attendance in the clerical skills laboratory was better than that of similar students not enrolled in the laboratory. Table 1 presents these data for the three schools enrolled in the program.

TABLE 1

ATTENDANCE REPORT FOR PARTICIPANTS AND NONPARTICIPANTS
EXPRESSED IN PERCENTAGES

School	Participants		Nonparticipants	
	Grade 11 N=100	Grade 12 N=25	Grade 11 N=1602	Grade 12 N=1596
Kensington	83%	83%	75%	83%
Roxborough		91%		81%
Bartram		84%		79%

While other variables may have intervened to enable this objective to be achieved, the laboratory appears to be one factor which has encouraged better attendance among the group of participants.

Objective 2. Data concerning the computational skills indicate a statistically significant increase in test scores from the pre- to posttesting periods. A t test was performed and the results indicated significance greater than .01 level of confidence ($t = 5.760$). The mean pretest score was 10.5 as contrasted with a mean posttest score of 19.05 (N=39). Norms for this test have been established based upon employed office personnel. A score of 19 on this scale is equivalent to the 85th percentile. Thus, these students would tend to be achieving at an acceptable level of performance for office occupations.

Objectives 3 Results from the large number of curriculum-based tests indicate considerable progress in clerical skills was attained by these participants. Because the curriculum materials were developed jointly by all teachers who participated in the program, students at each center were given the same packets of materials for each of the areas they completed. While each student worked at his/her own pace and students were working on different activities simultaneously, the pre- and posttests were administered prior and subsequent to each student's completion of the units covered. In addition, on some activities a pretest could not be given where such attempts by students to utilize unfamiliar pieces of equipment might damage such equipment or where a pretest would be clearly inappropriate.

While some classes had additional categories of learning activities, the following skills were taught in all classes:

- Stock Control
- Accounts Payable
- Accounts Receivable
- Office Cashiering
- Model Office
- Ten-Key Adding Machine.

Tables 2 through 8 show the results of those tests which have been administered to these participating students who are in grade 11.

TABLE 2

STOCK CONTROL

Test	N	Mean Score	
Pre	54	35.2	
Post	54	77.1	$t = 10.28$*

*Significant at the .01 level.

TABLE 3

ACCOUNTS PAYABLE

Test	N	Mean Score	
Pre	33	38.3	
Post	33	73.0	$t = 6.78$*

*Significant at the .01 level.

TABLE 4

ACCOUNTS RECEIVABLE

Test	N	Mean Score	
Pre	39	43.2	
Post	39	77.1	t = 7.59*

*Significant at the .01 level.

TABLE 5

OFFICE CASHIERING

Test	N	Mean Score	
Pre	46	24.9	
Post	46	70.9	t = 10.949*

*Significant at the .01 level.

TABLE 6

MODEL OFFICE

Test	N	Mean Score	
Pre	27	39.29	
Post	27	72.96	t = 5.94*

*Significant at the .01 level.

TABLE 7

PAYROLL

	N	Mean Score	
Pre	13	9.83	
Post	13	86.41	$t = 14.29^*$

*Significant at the .01 level.

TABLE 8

TEN-KEY ADDING MACHINE

Test	N	Mean Score
Post	47	88.5

The results from the administration of these instruments show the gains in student knowledge over the course of the academic year. The mean posttest scores all equal or exceed the percentage on tests which are based upon a total possible score of 100. Since these tests are based upon minimal hiring standards for clerical employment and the students have completed grade 11, it would appear that the laboratory is emerging as a successful vehicle for the training of students to meet the demands of employers.

Results from the remaining SRA Short Tests of Clerical Ability are shown in Table 9.

TABLE 9

SRA SHORT TESTS OF CLERICAL ABILITY

Subtest	Students Grade 11 Score	Percentile (Norms: Employed Clerical Personnel)	Directon of Pupil Performance (Beginning to End of Year)
Checking	34	30	+
Coding	73	25	+
Filing	14	50	+
Language	5	30	+
Business Vocabulary	10	15	No Change

While it is observed that the students did not achieve scores at the higher percentile levels as compared with Employed Clerical Workers, it would seem that these scores are acceptable in terms of the direction in which they have been going from the beginning of the year to the posttesting period near the end of the school year. In every case but one (business vocabulary) increases in scores in a positive direction have been statistically significant at the .05 level of confidence. An examination of the content of the business vocabulary subtest reveals little correlation between course content and materials covered by the instrument. Such business vocabulary covers terms utilized by corporations, purchasing departments, attorneys dealing with contracts and other business terms not within the purview of this course at this level. While such general business terms are desirable, the students would not necessarily perform less competently without such knowledge at this time.

Students in grade 12 achieved the following results: Payroll Mean = 86.7; 95 percent passed the process of mimeograph and use of all duplicating equipment; ten-key mean = 80; calculator mean = 79. Stock control, accounts payable, and accounts receivable means were 89, 88, and 83 respectively.

While the simulated office experience made testing more difficult, observation indicated considerable motivation and a high degree of interest and involvement on the part of students with all tasks.

Objective 4. This one objective was unable to be measured due to the difficulty of establishing reliable criteria for its determination. Attempts will be made in future evaluations to establish some method of measuring the degree to which oral communication has been improved.

Conclusions and Recommendations

The Clerical Skills Laboratory appears to be functioning quite well as a vehicle for effective teaching of business subjects on an individualized basis. Among the reasons for the greater success of this project during the 1971-1972 school year has been the appointment of a project manager on a full-time basis. This appointment has provided the impetus for much greater cooperation among participating schools, especially in the area of curriculum materials development and coordination of audiovisual materials utilization.

Among the essential components which have helped determine the success of this program has been the time spent by participating teachers in the development and reproduction of curriculum-based materials and tests which accompany the desired skills to be mastered by the students. Without such materials, individualization of instruction would have been impossible to achieve.

When this project is expanded to other schools, time must be given to adequate teacher preparation. This is being done during the summer of 1972 for those schools to which the program is being expanded during the 1972-1973 school year. Ways must be found, also, to provide these schools with appropriate equipment and materials early in the school year to insure positive student motivation.

The present attempts during the summer sessions to design and refine the curricula according to the systems approach using task analyses and job-hierarchy charts has great promise, not only for improved curriculum materials but also more refined research techniques to be utilized during the 1972-1973 school year.

MOTIVATIONAL VISITS TO BUSINESS
Project Number 2

Project Area: Business Education

Project Director: Arthur Hertzfeld

Project Manager: Elizabeth London

Location: West Philadelphia High School

Number of Students Served: 73

Official Proposal Number: 1-3/10-1191

Starting Date of Project: December, 1971

Category: Disadvantaged

The Project

Motivational Visits to Business is a program designed for 10th-grade business-oriented students who, because of academic, socioeconomic, or cultural deprivation are not achieving the kind of school records that will qualify them for office occupations. This program is designed to provide career education for these students through visits to offices of leading companies where, under the guidance of regular employees, they will be exposed to a realistic work situation. While the amount of exposure will vary from firm to firm, in general, the students will spend several days with employees of the firms and will receive firsthand information of the types of jobs available, the qualifications needed to fill such positions, and what employers look for in beginning office workers.

Objectives

1. To expose 10th-grade youth to one aspect of the world of work.

2. To provide youth with an awareness of office occupations.

Observations and Findings

MVTB was scheduled to begin operation with the start of the 1971-1972 school year. Because of administrative difficulties, the program did not become operational until December, 1971. Therefore, it was decided to limit program participation to students at West Philadelphia High School. Between January and June, 1972, a total of 73 students made 101 visits to participating companies. These data are presented below.

TABLE 1

Company/Student Participation

Company	Number of Student Visits
Bell Telephone	25
Philadelphia Inquirer	14
Rohm & Haas	13
John Wanamaker	4
Chilton Publishing Company	7
Lincoln National Bank	11
Fireman's Fund	8
North American Publishing Company	7
Western Savings Bank	4
Ritter Consumer Finance Co.	8
	N = 101

As noted in the table, Bell Telephone, the Philadelphia Inquirer, and Rohm and Haas were most active in their participation within the program. Observation of the conditions of the visit, however, would tend to indicate that the visits to the Inquirer provided less opportunity for exposure to office occupations than was the case with the other companies. This situation is a condition of the type of industry, however, and not a function of the company's plan for the students' activities in and of itself.

At the completion of each set of visits to a particular company, each student completed a questionnaire describing his reactions to the program.

Because of the variety of experiences the students have had, it was difficult to categorize the new jobs to which they have been exposed. However, the responses fell into two categories, with each student learning at least one office-related activity and one which related to the particular business or industry in which the student participated. In addition, some students were exposed to the employment practices of the companies by taking tests and filling application blanks.

Among the newly-learned concepts and activities were exposure to a wide variety of business machines, especially in the field of billing and accounting functions, and the use of the computer for office functions.

With two exceptions, the students expressed considerable satisfaction with program activities and 71 or 97% would recommend such a program to other students who are enrolled in the same or similar curricula at their grade levels. Also, students believed selected courses such as shorthand would be a wise selection in order to qualify for office employment upon graduation.

As a result of their exposure to business and industry only six students (8%) believed they would not select office occupations upon graduation. Thus, an additional benefit of this program provides students with an opportunity to consolidate, verify, corroborate their decision about career plans. This exposure enables the students to confirm their career goals and make course selections accordingly.

An attempt was made to determine the effect of this program upon attendance and grades. In this respect, no conclusive data could be found. While not a primary objective of this program at this time, modifying disadvantaged students' perceptions of office work and ultimately changing school-related behavior as an outcome, should become a concomitant objective as the program develops.

Forty of seventy-three students demonstrated a decrease of five percent or more absences after participating in this program, while about the same number demonstrated an equal reduction in lateness. This cursory view, therefore, would appear to indicate that changes occurred in a random fashion, and no consistent trend was present; however the attendance of these students as a group was higher than the school as a whole (86% as compared with 68% A.D.A.).

Changes in grades between the first and the third report periods in those two subjects directly related to office occupations were examined. Between the first and third report periods, three of the students demonstrated no change in their clerical practice grade, fifteen students improved at least one grade level, and three students improved two or more grade levels. Six students had a reduction in grades of one level, and four had a reduction of two grade levels. By the third report period 38 students

had attained an A or B in this subject, while seven students had a failing grade. Typing scores were slightly below this achievement level. Because so many variables contribute to achievement in school it is difficult to examine these grades in terms of the project's impact. Ways must be found in future project implementation to transfer positive attitudes learned at the business and industry sites to classroom activities and student performance.

Conclusions and Recommendations

As its first year of operation would indicate, the intial objectives of this program have been satisfactorily met. An even greater number of students was served than could have been anticipated with the late starting date of the program. The students have been given a more realistic exposure to office occupations than would be possible within the traditional classroom setting, thus strengthening the relevance of classroom experiences to the world of work.

The participation of the respective companies has been good. They have provided the necessary personnel and time to ensure the success of this program. While the number of companies needs to be expanded, it is critical that this expansion be limited to those types of companies in which a substantial portion of student time can be spent in observing or participating in relevant office occupations.

For those students who were given the opportunity to view the respective companies' basic hiring practices, the experience was invaluable, and its impact was considerable.

While the basic program is operating satisfactorally, it is difficult to assess its long-range impact upon student behavior and performance.

A strong recommendation for future program implementation would be to include a follow-up of student experiences within the traditional classroom setting. In this way, whatever positive impact this program has could be reinforced over time. While no organized follow-up of student performance was conducted during this first year of operation, a cursory examination of student grades did not indicate any substantial change as a result of the program.

Therefore, some methods must be found to reinforce the motivational techniques which are utilized in this program.

Also necessary is a thorough study of alternative time periods to determine the optimal exposure for subsequent behavior change in program participation.

DISTRIBUTIVE EDUCATION PROJECT PLAN
(Project #3)

Project Area: Business Education

Project Director: Jacob Kafin

Project Manager: Jacob Kafin

Location: 18 Senior High and Voc. Tech. Schools having DE programs.

Number of Students Served: None, Staff Development

Official Proposal Number: 01-6/10-1191

Starting Date of Project: July, 1971

Category: B, Disadvantaged

The Project

The Distributive Education (DE) Project Plan has developed materials for DE classes in senior high and vocational-technical schools.

The materials follow the project method, a technique that extends classroom instruction into a laboratory situation and takes into consideration each student's career objectives and other individual differences. The project technique is used as a preparatory experience for students who are not yet ready for paid employment, and for students who cannot become involved in the cooperative method.

Training and experience necessary for career development are carried out in a laboratory environment similar to real life situations, and classroom activities are related to the situations.

Objectives

1. To determine which teachers are using the materials.

2. To determine which teachers intend to use the materials next academic year.

3. To obtain user evaluation of the materials including, (a) which projects should be altered, and (b) which sections of the instruction booklet should be altered.

Observations and Findings

Teachers of Distributive Education (DE) at six high schools have been interviewed. None of them used the materials as the authors intended (i.e., none believed the materials by themselves were an acceptable alternative to a student's work experiences). However, several used the materials as a supplement to the work experience. One teacher-coordinator (T-C) labeled the materials "make-believe work." He said that the term "project student" is a euphemism for "unemployable." Another T-C said, "The Project Method does not meet the objective of finding a job. It does not develop a salable skill because every company is different...the Project Method is just a way of giving the kids another classroom." A third T-C said, "Work cannot be simulated."

All teachers used some of the 26 projects in their classes, but they were using the projects before the Project Plan materials were developed. None of the T-C's followed the Project Plan's suggested format, such as evaluation and time-logging. One T-C said that the recommended procedure was "too academic." He said that the process, not the results, was important.

Use of any part of the Project Plan materials by the teachers could not be attributed to the development of the materials during July.

Suspecting that the 12th-grade T-C's were biased to the materials, further interviews were conducted with teachers of 11th-grade students. The responses of the 11th-grade teachers followed the same pattern. No evidence was found that indicated the teaching methods or curriculum of the teachers changed after receiving the Project Method materials.

The teachers' responses to two questionnaires are summarized in Tables 1 and 2.

TABLE 1

TEACHER RESPONSE TO PROJECTS

Project Numbers	Desirable*	Not Desirable**
1, 5, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	✓	
2, 3, 4, 6, 11, 26		✓

*At least 50% of teachers responding "Desirable"
**Fewer than 50% of teachers responding "Desirable"

TABLE 2

TEACHER RESPONSES TO INSTRUCTION BOOKLET
(N=5)

Retain*	Omit or Change**
Preface, 1, 2, 3, 8, 9, 10, 14, 17, 18, 19	4, 5, 7, 11, 12, 13, 15, 16

*At least 50% of teachers responding "retain".
**Fewer than 50% of teachers responding "retain".

The teachers' responses in conversations with the evaluator followed similar patterns. They said that while they themselves had considerable teaching experience, the materials should prove helpful to beginning teachers.

Most teachers said that one reason they would suspect teachers did not use the materials was the way the materials were distributed. The teachers received two booklets held together with paper fasteners along with a cover letter in September. Conversations indicated that by September the teachers had the year's work already planned anyway. Some teachers indicated that more attractively prepared materials presented at a meeting of DE teachers during which a demonstration of the materials was given would have encouraged the materials' use.

Conclusions and Recommendations

The materials developed by Project Plan were not used to a significant degree in the 1971-1972 school year. The materials might be used if (a) appearance of the materials improved, (b) the materials were distributed earlier, and (c) the materials were followed by demonstration.

DEVELOPMENT PROGRAM FOR VOCATIONAL BUSINESS EDUCATION TEACHERS
(Project Number 4)

Project Area: Business Education

Project Director: Mr. Arthur Hertzfeld

Project Manager: Mr. Sam Kaplan

Location: Temple University

Number of Students Served: Approximately 180

Official Proposal Number: 10-1191

Starting Date of Project: September 1971

Category: Part B - Staff Development

The Project

Because of the learning and reading difficulties of many students and the availability of so much new multi-media teaching equipment and materials, it is imperative that staff development programs be conducted for vocational business education teachers. The staff development program was designed to give teachers an opportunity to familiarize themselves with the new equipment available, and also help to improve their teaching methods and techniques. This staff development program was developed to help teachers to do a better job of preparing students to meet the needs of business when securing initial employment, as well as helping them to prepare to advance on the job. The vocational business education teachers participating in this staff development program represented five major business education areas: Bookkeeping, Business Data Processing, Clerical Practice, Shorthand, and Typing.

This program involved 180 vocational business education teachers who attended an average of seven hours each.

Objectives

1. To provide business education teachers with the newer concepts in education.

2. To provide a vehicle to enable teachers to discuss mutual problems and possible solutions to these problems.

Observations and Findings

The program was designed in two sessions:

1. The first session was devoted to a keynote address by a speaker with expertise in the field of individual differences and its application to teaching methods. Among the topics discussed were accountability, differentiated staffing, the role of vocational education in the total educational picture, new trends in vocational education, and the problem-solving approach. The second half of the first session was devoted to small-group discussions concerning the application of these principles to vocational education in general.

2. The second session was devoted to a brief recap of the previous session and the small-group discussion approach but with greater specificity in subject area.

Participating teachers attended two group sessions, each in a different subject area. At the conclusion of the first session, each participant completed a questionnaire, the results of which are presented below.

TABLE 1

TEACHER RESPONSES TO QUESTIONNAIRE

Item	Positive	Neutral Or Acceptable	Negative	Total
General Attitude Toward Program	52%	37%	11%	100%
General Format of Program	71%	15%	14%	100%
Progress Toward Stated Goals	28%	54%	18%	100%
Individual vs. Group Goals	63%	34%	3%	100%

An examination of Table 1 indicates at least moderate success was achieved in carrying out the in-service program.

Responses of the teachers to the guest speaker and the first small-group discussions are summarized as follows:

In general, a majority of the group believed the speaker presented innovative ideas and a new approach to the teaching of business subjects. However, some of the comments noted by the recorder in several of the groups indicated some deviation of discussion from the main issues; much time was spent with those socioeconomic factors which affect the learning habits of students where they were sufficiently skilled; some group leaders were able to channel most of the discussion to possible solutions of these problems.

The results of the second series of workshops were summarized by recorders in the small-group discussions:

The major problems which inhibit teachers seem to lie in two areas: they observe poor attendance, discipline and motivation in students. These factors are coupled with problems of overcrowded classrooms, rostering and scheduling problems, too many nonteaching duties, and other types of administrative difficulties. Stress was laid upon discussing those issues to which teachers might find some solutions, while each group placed a slightly different emphasis upon varying issues. Three areas of major concern follow.

1. Motivation: The consensus appeared to view an emphasis upon individualized instruction as one strong technique for improving the motivation of students. While this requires a substantial amount of commitment and funds to implement, members of the groups believed such an approach would assist to improve motivation.

2. As a concomitant to individualized instruction, training sessions for teachers should be developed. However, many teachers believed that concrete guidelines with specific examples should accompany these in-service programs. Persons from industry might be called upon to work with teachers to insure that such instruction meets the needs of industry regardless of the variety of the pace of learning among students.

3. Administrative problems inhibiting teachers, such as too many noninstructional duties and a too low ratio of teachers to pupils, would suggest such solutions as (a) an increased use of paraprofessionals, (b) individualized instructional materials, and (c) audiovisual aids and equipment necessary to achieve the desired skills among students.

Follow-up interviews were conducted with at least two or three participants in each of the nineteen schools. Of this number, all teachers believed the value of the conference was enhanced by the development and distribution of appropriate materials. These materials, in booklet form, contained the following: (a) keynote address, first meeting, (b) workshop session notes, first meeting, (c) evaluation of questionnaire data from participants, (d) keynote address, second meeting, (e) workshop session notes, second meeting, (f) resource materials, professional associations and publications, (g) conference participants. Of the total number of participants interviewed, 75% reported some use of the materials within the classroom setting.

Of special help to all teachers was the outline of the keynote address describing a way in which behavioral objectives could be incorporated into classroom activities on a consistent basis.

The resource and reference materials section also had value as a ready reference source for teachers. This section was mentioned by a majority of both participants and nonparticipants alike as a valuable resource. While this section was not an integral part of conference activities, it was compiled by conference planners in response to a stated need of the participating teachers.

Conclusions and Recommendations

This program accomplished its goals of (a) providing business education teachers with the newer concepts in education and (b) providing a vehicle to enable teachers to discuss mutual problems and possible solutions to these problems.

The in-service program would appear to have had some impact upon participating teachers. The major impact of the guest speaker was upon developing techniques for enabling teachers to utilize the concept of individualized instruction in specific skills development. Also emphasized was the recognition of individual differences and its impact on learning.

Additionally, the printing and distribution of these conference materials to all teachers had a positive impact beyond the conference itself. While it is difficult if not impossible to change teacher behavior on the basis of two three-hour sessions, some few teachers were able to change teaching style to a small degree as a result of both the conference and its reinforcement by the publication. Nonparticipants were able to gain the benefit of both workshop notes and keynote addresses.

Where conferences are limited to brief sessions and workshops, the development of printed materials is essential to insure some follow-through on the part of the participants. In cases where long-range behavioral change is an objective of the program, another structure of a more intensive nature would be necessary.

As this program was designed to meet the needs of teachers in the more limited fashion, the objectives were clearly met.

COMPUTER-ASSISTED VOCATIONAL GUIDANCE (VICS)
(Project Number 5)

PROJECT AREA: Pupil Personnel/Instructional Computer Center

PROJECT DIRECTOR: Dr. Sylvia Charp

PROJECT MANAGER. Henry R. Altschuler

LOCATIONS: Edison, Frankford, Franklin, Gratz, Lincoln, Olney, Overbrook, Roxborough, and West Philadelphia High Schools

NUMBER OF STUDENTS SERVED: Students in all schools mentioned. Approximately 2,700 as of 12/22/71.

OFFICIAL PROPOSAL NUMBER: 01-44/10-1191

STARTING DATE OF PROJECT: September 1970

CATEGORY: Disadvantaged

The Project

The VICS project disseminates vocational information by means of teletype computer terminals located in nine high schools. A student, seated at a teletype, can enter into a dialog with a central computer, programmed to supply on request information about either broad or specific vocation categories or detailed information about a particular one of some 400 vocations. Some counselor supervision is required. At the end of the first dialog, the student is interrogated via a computer-administered questionnaire about his reactions to the experience. The data is accumulated by the computer along with data about extent of usage.

Objective

To acquaint secondary school students with the salient facts about occupations in which they are interested.

Observations and Findings

The project has been observed on one or more occasions at Frankford, Franklin, Olney, Overbrook, Gratz, Edison and West Philadelphia. Anecdotal records of these observations reveal some variability in housing and staff arrangements. At one extreme, Edison's terminals are housed in

TABLE 1

STUDENT RESPONSES TO VICS QUESTIONNAIRE

Questionnaire Item	Response	Percentage of Responses (N= 2700)
1. How soon after you asked were you able to use the VICS Program?	Same day	50.5
	One or two days later	16.0
	More than two days	33.4
2. Did you learn about any occupations that you did not know existed until today?	No	44.5
	Yes, one or two	32.7
	Yes, more than two	22.7
3. Were my instructions easy to follow?	Yes	92.7
	No	7.2
4. Was the job information too hard for you to read?	Yes	18.3
	No	81.6
5. From which of the following would you prefer to get job information?	The computer	79.2
	Books & other reading mat.	1.9
	Counselors	8.9
	Teachers	2.2
	Other sources	7.6
6. Do you think that this information will help you in planning a career for yourself?	Yes	74.0
	No	2.4
	Not sure	23.4
7. Are you going to discuss your future career plans with your counselor?	Yes	59.9
	Only if I am asked	29.5
	No	10.4
8. Are there any jobs that you wanted to learn about that were not on the computer?	No	77.4
	Yes	22.5

a dark room subject to roof leaks and dampness in a building slated for demolition. At the other extreme, three rooms at Franklin have been combined into an attractive vocational information center with the terminals as chief feature, and at Gratz the terminals are housed in the large modern Action Center. At Franklin, as at some other schools, a counselor has been relieved of all other duties to run the center; but other schools, e.g., West Philadelphia, depend on the part-time attentions of a counselor and of a volunteer aide for terminal scheduling and supervision.

A number of programming problems impaired the effectiveness of VICS at the beginning of the school year, but these problems have been corrected. The computer-administered student questionnaire was incorporated in January. Student responses are summarized in Table 1.

Usage of the terminals is recorded in the computer's files and is summarized periodically by the computer program. It is understandably heavy at Overbrook and Frankford, where the two counselors principally responsible for the program have been on duty two days each week for most of this school year. Low usage at Lincoln, Roxborough, and Olney reflects their recent inclusion in the program. As of May 16, 8,401 job explorations had been made, mostly in the service, engineering, repair, construction, and mechanics areas; selling outdoor, science, and cultural areas were infrequently explored.

A student beginning a session at a terminal may elect one of three modes of usage: (a) ask for general information about specific jobs; (b) select categories and subcategories from lists printed out by the computer; (c) ask which Philadelphia area schools prepare for specific occupations, how much they cost, and what scholarship or other aid is available.

Mode C has recently been incorporated in the program and hence has had little usage, as yet. About 67% of the usage has been in mode A, 29% in B, and 4% in C.

When a student explores an occupation, he may ask any or all of a list of 14 questions. (The list is usually posted on the wall near the terminal.) The most frequently asked questions relate to educational requirements for the occupation, appropriate high school courses, and current Philadelphia salary. The student is also asked what educational level he would like to attain after leaving high school. Thus each exploration of an occupation is associated with a job category and an educational level.

The following job categories are used:

1. Service (SVC)
2. Business (BUS)
3. "White Collar" (WC)
4. Engineering, mechanical, etc., (ENG)
5. Outdoor (O)
6. Science (SCI)
7. Cultural (CUL)
8. Arts and Entertainment (A&E).

The following educational levels are used:

1. Graduate training beyond Bachelor Degree (GRAD)
2. Bachelor Degree after four years of college (BS)
3. Two or more years of business, trade, or technical school (2 years)
4. Under two years of business, trade, or technical school, or apprenticeship (<2 years)
5. On-the-job training (OJT)
6. None

The frequencies of explorations in these categories/levels are displayed in Table 2.

TABLE 2

EXPLORATION BY ANTICIPATED EDUCATIONAL LEVEL AND EMPLOYMENT AREA

EDUCATIONAL LEVELS		JOB CATEGORIES							
		SVC 1	BUS 2	WC 3	ENG 4	O 5	SCI 6	CUL 7	A&E 8
Grad	1	440	0	7	87	21	307	109	87
BS	2	1084	57	434	192	182	196	217	612
2 yrs	3	327	48	93	409	16	41	25	324
<2 yrs	4	344	14	614	763	42	77	28	84
OJT	5	154	65	366	238	57	0	0	0
None	6	68	4	34	7	3	0	0	0

Conclusions and Recommendations

Analysis of the data reveals that about 1,300 interactions (student requests for information satisfied by the computer) occur in a typical month. This is interpreted to mean that students are requesting and receiving occupational information consistent with the stated goals of the project. Analysis of questionnaire responses shows that the students who use it regard VICS as helpful, easy to use, and available when needed. They usually expect to follow up with counselor consultation.

VICS has demonstrated that it can function as a viable counseling facility, serving large numbers of students, and incorporating a feedback mechanism for its own further improvement and development. The service provided is one which was not, in practice, made available previously by counselors' efforts or otherwise, nor, in view of other demands on counselors' time, could it have been provided in Philadelphia's schools as they are presently organized and staffed.

VICS is now fully operative in 9 schools. The information stored in the computer's files is continually updated. Further refinement and expansion of the computer program continues; preparations are being made for serving 22 schools during the 1972-1973 school year.

COMPUTER-MANAGED ELECTRONICS
(Project Number 6)

Project Area: Instructional Computer Center

Project Director: Sylvia Charp

Project Manager: Henry R. Altschuler

Location: Dobbins

Number of Students Served: Approximately 16-20

Official Proposal Number: 01-37/10-1191

Starting Date of Project: September, 1970

Category: Part B Disadvantaged

The Project

A computer is used to score tests, maintain records of student performance and progress, and assign appropriate instructional units to individual students in an experimental electronics class at Dobbins Vocational-Technical School. The course content is substantially the same as that of two other tenth-grade electronics classes, which serve as control groups. For each instructional unit there are assignment sheets, textbook references, and mastery tests on three levels of difficulty, based on five behavioral objectives. About 45 units are planned, of which 25 are now complete.

Objective

The objective is mastery of technical skills and knowledge dealing with electronics technology, including atomic structure, conductors, insulators, static electricity, charged bodies, measurement, work, energy, power, and efficiency in the context of benchwork using electrical tools and instruments.

Observations and Findings

Three major tests were administered during the year. The first, Questionnaire #1, was administered as a pretest and again as a posttest to both experimental and control groups. Gain scores for the experimental

group averaged 10.82 out of a possible 30. (Formula scores, adjusted for guessing, are given throughout.) One control group had a mean gain score of 2.33, the other of 1.70. An analysis of covariance, with posttest score as criterion variable and pretest score as covariate, showed the difference between experimental and control groups to be significant at the 1% level. The other test, Questionnaire #3, was administered to both experimental and control groups, but only once (as a posttest). The groups did not exhibit significant differences at the 5% level on Questionnaire #3, however.

The statistics for Questionnaire #1 and Questionnaire #3 are presented in Table 1 and Table 2, respectively. They were produced by the Clyde Computing Service MANOVA computer program.

Instructional units, comprising assignment sheets, expository material, and tests, were written during the year as the class progressed. At this time, 47 units are completed. Each is written on three levels: A (difficult), B (moderate), and C (easy).

TABLE 1

QUESTIONNAIRE #1 STATISTICS

	Experimental Class	Control	Control
Mean score-pretest	6.152	7.689	6.273
Mean score-posttest	16.974	10.021	7.970
Mean gain score	10.822	2.332	1.697
Standard deviation pretest	4.870	3.162	3.322
Standard deviation posttest	5.740	5.909	5.061
Posttest mean adjusted for regression on pretest	17.567	9.207	8.453

Covariance analysis:

Source	S.S.	D.F.	Mean Sq.	F	Prob.
Within cells	717.781	36	19.938		
Regression	457.493	1	457.493	22.945	<.01
Effect of method	655.227	2	327.614	16.431	<.01

TABLE 2

ANALYSIS OF VARIANCE - QUESTIONNAIRE #3 STATISTICS

Source	S.S.	Deg. Freedom	Mean sq.	F ratio	Prob.
Between cells	99.53	2	47.26	2.23	>.05
Within cells	741.56	35	21.19		
Total	836.09	37			

Nearly twice as many units were mastered at the A level as at the C level.

An extended observation of the class supplemented by several short observations revealed that the students understood and followed the routine established for use of the two teletype computer terminals. On arrival at the class, they accessed the computer for the day's assignment and proceeded to carry out the instructions. The teacher was thus able to circulate among the benches and devote most of his time to individual instruction. When finished with a unit, a student used a teletype terminal to take a test, and received his performance score immediately. He also played a bidding game in connection with his test score, in which he "bet" on the outcome. (The game has been incorporated into the computer program and seems to provide extra motivation.)

Conclusions and Recommendations

The experimental class exhibited greater learning than the control classes on Questionnaire #1 but not on Questionnaire #3. In general, the class seems to have functioned as intended and achieved the goals of this project.

Even more effective than the teletypes and the computer facility are the numerous well-organized assignment and reference sheets that have been prepared for the instructional units. They represent an investment of effort equal to or greater than the computer programming; without them, the project could not function at all.

HEALTH CAREER COOPERATIVE PROGRAM
Project Number 7

Project Area: Career Development

Project Director: Mr. Mason M. Moton

Project Manager: Dr. Robert Gilbert

Location: South Philadelphia Sr. High, Thomas Jefferson University Hospital

Number of Students Served: Approximately 12

Official Proposal Number: 01-9/10-1191

Starting Date of Project: 1969

Category: Part B

The Project

The Health Career Cooperative Program is designed to awaken the interest of capable disadvantaged high school students in the field of health careers.

The program involves approximately twelve South Philadelphia Senior High students, all of whom were chosen after having expressed an interest in participating in the program. The students, after relating their areas of interest, are assigned to work in individual research laboratories, in clinical laboratories and in clinical situations. On occasions, the Southern students meet as a group with medical students and some of the faculty to compare problems and to participate in discussions concerning health career possibilities, preparations for health careers and topics in biology.

For thirty weeks during the school year, the students met weekly for two half-day sessions.

Objectives

1. To stimulate interest in the field of health careers.

2. To enable high school students from disadvantaged areas become more aware of their potential for employment in health careers.

Observations and Findings

Observations of five of the twelve participating Southern High School students indicated that the students were actively involved in various laboratory situations such as microbiology, radiology, rehabilitation, biochemistry, pharmacology and assisting nurses.

When asked if the Health Career Cooperative Program had any influence on tentative major fields of future study, seven of the students responded positively, while only one had a negative response. Six of eight students responding to the questionnaire expressed a belief that the program enabled them to acquire more insight because of the "hands-on" situation at Jefferson Hospital.

Approximately one-third of the responses on the Health Career Questionnaire indicated that of the 12 students, eight felt that the activities in which they had been involved were strongly related to the objectives of the program.

Six exemplar items and their responses are given in Table 1.

TABLE 1

ITEMS AND RESPONSES

Question: Were you interested in participating in this program?

Response	No. of Responses
Yes	7
No	1

Question: How did you become a participant?

Response	No. of Responses
1. Elected, chosen	6
2. Volunteered, offered to enter of free will	2

Question: If you are making undergraduate plans, what will your tentative major field be?

Response	No. of Responses
1. Science	4
2. Nursing	2
3. Undecided	2

Question: Has the Health Career Program at Jefferson had any influence on your answer to the above?

Response	No. of Responses
Yes	7
No	1

Question: Who has been a more recent influence upon your future plans?*

Response	No. of Responses
1. Preceptor (Jefferson Faculty)	5
2. Teacher	4
3. Relative	2

Question: Are you now more aware of the careers in Health Services than you were prior to this program?

Response	No. of Responses
Yes	8

*NOTE: Multiple responses were used to answer this question.

Conclusions and Recommendations

This program is stimulating interest in the areas of health careers. The students with whom the observer was able to speak and who responded on the questionnaire reacted quite favorably to the program. When visiting the laboratories at Jefferson Hospital, the students developed a keen interest in the tasks at hand and were quite anxious to explain, in detail, the work they were participating in. Those students who made definite post-high school educational plans were planning to pursue scientific careers.

The project's success in enabling disadvantaged students to become more aware is evidenced by the large percentages of participants who are planning to pursue careers in health areas, who have been involved in the program since their second year of high school, and who are expressing a desire that the Health Career Program continue to function. In responding to the Questionnaire, students cited a number of reasons why they thought the program should continue. Their comments revealed that they felt that the program (a) assists in planning vocational careers; (b) allows pupils opportunities to explore new fields of interest; (c) permits pupils to learn of health careers; and (d) allows pupils to see different areas of the hospital.

The most positive aspect of this project is student involvement in the field of health careers.

The most outstanding problems seemingly lie in the lack of administrative time, a need for more supervisory personnel, and the unevenness of the participating youth in terms of their scholastic preparedness.

Involvement of ten prospective sophomores this school year, 1971-1972, was delayed because Jefferson Hospital needs scholastic and economic information on each child. The South Philadelphia High School coordinator, however, has found the task of gathering scholastic records and economic status information, and determining extent of interest on the part of the students to be an overwhelming job for one person who also has other teaching duties to perform.

GUIDANCE MATERIALS FOR OCCUPATIONAL EDUCATION
Project Number 8

Project Area: Career Development

Project Director: Mr. Mason M. Moton

Project Manager: Mr. Ken Miller

Locations: Currently Involved: FitzSimons, Sayre, Sulzberger, Turner, Wanamaker, Conwell, Strawberry Mansion, Pennsylvania Advancement School and Engineering Graphics

Number of Students Served: 883

Official Proposal Number: 10-1191

Starting Date of Project: 1969-1970

Category: Part B, Disadvantaged

The Project

"Guidance Materials for Occupational Education" is a series of slide-tape presentations designed to pictorially show students the conditions and opportunities that are available to them in the world of work. The program was developed to broaden the vocational horizons of inner-city youth by assisting them to understand job-entry requirements and advancement possibilities as they relate to the areas of trade and industrial education, business education, health occupations, and home economics.

The Graphic Arts industry was the first occupational area selected. Ten occupations were selected and developed as a pilot project for use in occupational guidance for the middle and junior high schools. An evaluation of the pilot project was conducted earlier this year. The results of the evaluation were published in the Evaluations of State Selected Projects. School District of Philadelphia, Office of Research and Evaluation, April 1972.

The current evaluation is focused on selected slide-tape presentations developed since the previous evaluation. Teacher and pupil assessments of the original Graphic Arts presentations formed the bases for the development of the current presentations. Recommended changes were instituted to improve the overall quality of the tapes and to adapt the materials for use on a variety of standardized equipment (e.g., tape recorders and slide projection equipment).

The evaluation of the new tapes followed the previous procedures. The teachers and/or project manager provided a brief introduction of the occupation and informed the students that their opinions concerning the materials would be solicited. At the conclusion of each presentation, the students were given a questionnaire on which they were to assess the presentation in terms of its objectives, grade level, content, and technical quality.

Objectives

1. To assist students to develop an awareness of vocational courses which are consistent with their aptitudes, abilities, achievements, interests and goals.

2. To provide each student with a broad overview of the occupational areas which will enable him to select an area of vocational interest.

3. To make each student aware of the specific working conditions, advancement opportunities, and occupational requirements related to their specific area of interest.

Observations and Findings

The presentations were shown to randomly selected students at the following schools: Sayre, Wanamaker, Conwell, Strawberry Mansion, Pennsylvania Advancement School and Engineering Graphics. Pupils from Sayre Junior High who participated in the Career Development program were selected by the evaluator as an evaluative sample. Those pupils had developed a high degree of sophistication in viewing occupational guidance materials during their involvement in the program. In addition, an evaluation questionnaire developed jointly by the Office of Research and Evaluation and the project manager was administered to selected participating students at the remaining schools.

A group of 57 individual slide-tape presentations was developed during this current evaluation period. The presentations covered the following occupational fields:

Hairdresser	Painter & Paperhanger	Cutters & Spreaders
Policeman	Photographer	Registered Nurse
Rampserviceman	Licensed Practical Nurse	Typist
Telephone Operator	X-Ray Technician	Medical Secretary
Construction Overview	Sewers	Stenographer-Secretary
Auto Mechanic	Laboratory Technician	Sales Clerk
Service Station Dealer	Dentist	Cashier
Service Station Attendant	Doctor	Auto Overview
Computer Operator	File Clerk	Office Machine Operator
Chefs & Cooks	Secretarial Overview	Foundry Workers
Auto Body Painter	Carpenter	Banking Overview
Plumber & Steamfitter	Bricklayer	Certified Public Accountant
Cement Finisher	Waiter & Waitress	Lawyer
Kitchen Helper	Food Service Overview	Truck Driver

Auto Body & Fender	Keypunch Operator	Bookkeeping Clerk
Postal Employees	Pharmacist	Accounting Clerk
Janitorial Service	Dental Assistant	Receptionist
Operating Engineer	Rodman	Dry Cleaning
Sheetmetal Worker	Knitter	Photo Technician.

The following presentations were shown to students participating in the Career Development program at Sayre Junior High:

Computer Operator	Telephone Operator	Dental Assistant
Policeman	Keypunch Operator	Pharmacist.

Evaluation responses were tabulated for one 7th-grade class of 20 students and five 8th-grade classes totaling 109 students. The Computer Operator presentation was evaluated by the 7th-grade class only. The remaining presentations were evaluated by the 8th-grade classes.

While each presentation dealt with a completely different occupational field, five key questions in the questionnaire (items 1, 3, 4, 9, and 10) allowed the comparison of student responses across occupational fields. Those items related directly to the effectiveness of the presentations in general and allowed a cross reference across occupational fields. The remaining questions in the questionnaire (items 2, 5, 6, 7, and 8) dealt with specific aspects of the individual presentations and could not be generalized across other occupations. Item 2 dealt with the appropriateness of content to a given grade level. Items 5 and 6 dealt with occupational choice and preference. Items 7 and 8 dealt with obtaining knowledge and one's ability to give information about a specific occupation. Hence, the pupils were responding as a result of their previous experiences and not about the effectiveness of the presentation. An analysis of students' responses indicated that the slide-tape presentation on Keypunch Operator received consistently higher positive response than the others. Percentages of positive responses related to the six occupational fields are summarized in Table 1.

A review of the data in Table 1 indicated that the students at both grade levels reacted favorably to utility (Item 1), presentation (Item 3), enjoyment (Items 4 and 9), and desire for additional exposures (Item 10) with the exception of the Pharmacist occupation. All of the occupations with the exception of the Pharmacist and related fields dealt with technical occupations requiring manipulative and judgment skills. The Pharmacist and related occupations requires a background in science. Student responses seem to suggest that occupations requiring a scientific background are less likely to be understood by many students in inner-city schools. However, more than 60% of the students rated the presentation favorably on enjoyment (Item 4) and desire for additional exposure (Item 10).

TABLE 1

PERCENTAGES OF 129 STUDENTS' RESPONSES TO CERTAIN QUESTIONNAIRE ITEMS*

Items	Occupational Fields					
	Computer Operator	Policeman	Telephone Operator	Keypunch Operator	Pharmacist	Dental Assistant
	Percentage of Student Responses					
1. This presentation was planned to give you some facts about the world of work. Do you feel that you learned anything useful?	P 75% N 15% Ne. 10% T 100%	P 54% N 25% Ne. 21% T 100%	P 74% N 11% Ne. 15% T 100%	P 87% N 13% Ne. 0% T 100%	P 36% N 29% Ne. 35% T 100%	P 56% N 11% Ne. 33% T 100%
3. How much did the presentation tell you about the occupation?	P 60% N 30% Ne. 10% T 100%	P 46% N 38% Ne. 16% T 100%	P 59% N 33% Ne. 8% T 100%	P 74% N 26% Ne. 0% T 100%	P 14% N 43% Ne. 43% T 100%	P 56% N 44% Ne. 0% T 100%
4. Did you enjoy the presentation?	P 50% N 40% Ne. 10% T 100%	P 33% N 29% Ne. 38% T 100%	P 31% N 46% Ne. 25% T 100%	P 70% N 30% Ne. 0% T 100%	P 29% N 57% Ne. 14% T 100%	P 34% N 44% Ne. 22% T 100%
9. How would you rate the presentation?	P 65% N 30% Ne. 5% T 100%	P 54% N 29% Ne. 17% T 100%	P 51% N 31% Ne. 18% T 100%	P 92% N 8% Ne. 0% T 100%	P 64% N 29% Ne. 7% T 100%	P 55% N 45% Ne. 0% T 100%
10. Would you like another presentation of this type?	P 25% Ne. 75% T 100%	P 75% Ne. 25% T 100%	P 56% Ne. 44% T 100%	P 87% Ne. 13% T 100%	P 79% Ne. 21% T 100%	P 72% Ne. 28% T 100%

*P=Positive, N=Neutral, Ne.=Negative, T=Total

TABLE 2

SUMMARY OF STUDENT RESPONSES TO
PROJECT MANAGER'S QUESTIONNAIRE

Questionnaire Items	Responses	Percentage Responding
Grade Level		
1. The slides and narration were designed for junior high and middle school students.		
(a) Is the content appropriate?	Yes	82%
	No	18%
(b) Is the vocabulary appropriate?	Yes	92%
	No	8%
Technical Quality		
1. How would you rate the quality of the program?	Excellent	35%
	Good	51%
	Fair	14%
	Poor	0%
2. How would you rate the quality of the narration?	Excellent	33%
	Good	57%
	Fair	10%
	Poor	0%
Content		
1. Has any important information been left out?	Yes	16%
	No	84%
2. Are there any errors or inconsistencies in the presentation?	Yes	10%
	No	90%
3. What is your overall rating of the slides and narration in terms of the purpose to serve the indicated audience?		
(a) Slides	Excellent	31%
	Good	59%
	Fair	8%
	Poor	2%
(b) Narration	Excellent	32%
	Good	53%
	Fair	15%
	Poor	0%

The following 12 occupational presentations were shown to 49 students covering grade levels 5 through 12.

Rodman	Service Station Dealer	Service Station Attendant
Body and Fender Repairman	Mechanic	Policeman
Hairdresser	Computer Operator	Telephone Operator
Keypunch Operator	Waiter-Waitress	Food Service Overview

The project manager and/or teacher administered the evaluative questionnaire to the students. The questionnaire focused on three major aspects of the presentations: (a) grade level limitations, (b) appropriateness of content, and (c) overall technical quality, slides and narration. Responses were tabulated across all grade levels and across all occupational fields. While the tabulating procedures do not permit an observer to identify how the students rated individual programs or how individual grade levels responded to each presentation, it does give a general overall impression of student reaction to the presentations. Table 2 summarizes students' responses on the questionnaire.

The data in Table 2 show that 82 to 92 percent of the students felt that the content and vocabulary were appropriate for junior high and middle school students. Between 35 and 57 percent of them felt that the technical quality and narration of the slides were excellent or good. Between 84 and 90 percent felt that the required content was presented in a cohesive manner. Between 31 and 53 percent of the students rated the slides (pictures) and narration (voice) either excellent or good.

Conclusions and Recommendations

To supplement the existing guidance materials dealing with occupational information, the project was to prepare slide-tape presentations on 40 individual occupations, duplicate 10 copies of each presentation, and disseminate them to inner-city schools. To date, including the Graphic Arts series, the project has completed a total of 67 presentations, 27 more than required by the proposal. The reproduction process is proceeding on schedule. The specific objectives relating to the purpose of each presentation were also met as indicated by student evaluative responses. Most students (54 to 75 percent) felt that the presentations gave them factual information about occupations and assisted them in understanding the world of work. Other students (46 to 74 percent) felt that the presentations told them a lot about the occupations which made them aware of the specific working conditions, advancement opportunities, and occupational requirements.

CAREER DEVELOPMENT/INDUSTRIAL ARTS SUMMER WORKSHOP AND FOLLOW-UP
Project Number 9/21

Project Areas: Career Development, Trade, and Industry

Project Directors: Mr. Mason M. Moton, Director, Career Development
Dr. William Kelly, Director, Vocational Education

Project Managers: Mr. Mason M. Moton, Dr. George Wilkinson

Locations: Summer In-service: J. B. Kelly School
During School Year: Barratt, Harding, Jones, Leeds, Pickett, Roosevelt, Rush, Sayre, Stoddart-Fleisher, Strawberry Mansion, Vaux, Wagner, Wanamaker

Number of Students Served: Approximately 8,000

Official Proposal Number: 01-48/10-1191

Starting Date of Project: July 1, 1971

Category: Part B, Staff Development

The Project

Career Development programs were begun in Philadelphia junior high schools in the 1971-1972 academic year, with the purpose of improving the career guidance function of academic and practical arts courses and counseling programs. Academic and practical arts teachers, counselors, administrators, and community representatives attended a four-week workshop, sponsored jointly by the Divisions of Career Development and Vocational Education, in July 1971. Participants engaged in lecture and discussion sessions on career counseling techniques, integration of career development concepts with standard course material, effecting a working relationship with business and industry, and uses of audiovisual techniques. For the first two weeks, all participants met in joint sessions. During the third and fourth weeks, teachers and counselors separated into specialized academic and practical arts groups. Special sessions for administrators and community representatives were held throughout the month.

The overriding objectives of the workshop were these:

1. To help participants recognize the need for including career guidance as part of their schools' programs;

2. To provide participants with techniques required to implement such programs.

The test of whether or not these objectives were met would come during the school year, as participants were given the opportunity to operationalize their ideas.

After the conclusion of the workshop, participants returned to their schools, as Career Development Committees, to implement their designs for an expanded career guidance program. The program was (a) to include introduction of career development concepts into course materials, (b) to increase interaction with local business concerns, and (c) to provide a process by which career information could be disseminated to students and faculties.

Two hours of meeting time were provided each committee every two weeks, during which plans and schedules for career guidance activities were developed. Programs were designed so that all faculty members and students in each school would be involved. The early part of the school year was therefore devoted, in part, to writing and duplicating materials for school-wide distribution and staff development at each school.* Once faculties were informed of the objectives, efforts were undertaken (a) to assess students' career interests, (b) to develop schedules for outside visits and guest speakers, and (c) to disseminate career information through guidance and instructional periods, counseling sessions, assemblies, and special events, such as Career Days.

Objectives

Career Development Committees are:

1. to assist their fellow teachers in the integration of career development concepts in subject areas;

2. to develop a schedule of walking and motor tours to business and industrial sites for small groups of students;

3. to develop a schedule of visits to the school by business and industrial representatives who will talk with class and/or general assembly groups on careers their firms represent; and

4. to develop and maintain a "Career Information Corner," equipped with materials (reading, audiovisual, etc.) for students' use.

*Samples of materials produced by the Career Development Committees are available from the Department of Instructional Systems Research.

Observations and Findings

Eighteen visits, varying in length from 30 minutes to two hours, were made to six participating schools between November, 1971, and May, 1972. The schools monitored were Leeds, Roosevelt, Stoddart-Fleisher, Strawberry Mansion, Wagner, and Wanamaker. Career Development Committees at these schools consisted of both academic and practical arts teachers, and counselors. In at least one school, a community representative served on the Committee.

Monitoring consisted of observation of, and limited participation in, regular Career Development Committee meetings, interviews with Committee members and administrators, and observation of Career Development activities in classrooms, libraries, and counseling centers. Samples of materials produced by each of the six committees were collected.

Objective 1 (assisting fellow teachers in the integration of career development concepts in subject areas) was achieved through providing faculty members with information on career development, as well as by direct intervention in guidance and class periods. Materials prepared by each committee during and subsequent to the summer session were distributed throughout each school early in the year. In many cases, principals devoted parts of one or more faculty meetings to career development concepts. Committees then arranged schedules for classroom visitations, which were used both to survey students' career interests and to provide classes with career information. Classroom visits by Committee members were arranged on a rotating schedule, so that each class would be seen on a regular basis. Once initial visits were made, teachers were requested to pursue the concepts introduced with their classes; the Committee would be available for resource and consultation.

Objectives 2 and 3 (developing a schedule of walking and motor tours to business and industrial sites; developing a of visits to the school by business and industrial representatives to interact with students) were achieved by each school visited. Walking and motor tours to local businessess were conducted on a regular basis throughout the year. Business representatives from the community were brought in to address small groups, c'asses, and assemblies. One or more Career Days were held during which several local business representatives met with groups of students interested in the careers represented. Guest speakers, and students meeting with them, were generally chosen on the basis of the student interest surveys conducted earlier. This selection system was also used, in many cases, for determining which students to include on the various visits to local firms. Among the business establishments to participate were Bell Telephone Company, Philadelphia Electric, Philadelphia Gas Works, Progress Plaza, and a number of Philadelphia hospitals and department stores.

Objective 4 (developing and maintaining a "Career-Information Corner") was achieved in each school by displaying career information in

accessible locations, such as a hallway, library, or special room. Two schools (Roosevelt and Wanamaker) succeeded in establishing Career Development Rooms, in which small groups of students were scheduled on a regular basis, to explore individual interests, problems, and abilities in general and in terms of careers.

Conclusions and Recommendations

Career Development Committees achieved all four objectives in each school visited. Plans were implemented (a) to provide faculty members with career guidance materials for their students, (b) to tour local businesses, (c) to provide career information for faculty and student use in each school. Four of the six schools observed did not succeed in establishing a small-group counseling area. The chief reason cited for this by all participants interviewed was the shortage of available space to devote to such an endeavor.

Recommendations for future evaluations of Career Development Programs include administration of a project wide career knowledge inventory. to determine the extent to which the project has served to increase students' awareness of the career alternatives available to them. Such an instrument would be developed during the summer of 1972, on the basis of instruments currently in existence, on up-to-date job-market projections, and on information on the project itself obtained during 1971-1972.

CAREER DEVELOPMENT SPECIALIST
(Project Number 10)

Project Area: Career Development

Project Director: Mason Moton

Project Manager: Millicent Hartsfield

Location: Wanamaker Jr. High School, elverson and Harrison Elem. Schools

Number of Students Served: Approximately 100

Official Proposal Number: 01-48/10-1191

Starting Date of Project: January 3, 1972

Category: Part B Disadvantaged

The Project

A Career Development Specialist (CDS) and an assistant were hired by the Division of Career Development (CD) in late December, 1971. This team was to work in the Wanamaker Junior High School community, providing resource materials to Career Development Committees (CDC's) at Wanamaker and three of its feeder elementary schools, scheduling and administering small group career counseling sessions with pupils from these schools, and helping the schools plan comprehensive CD programs. In addition to counseling sessions, such programs would incorporate visits by and to the faculties and students of each school.

Wanamaker's CD program was underway by the time the CDS program began in January, 1972. Programs were to be organized in three elementary schools, with the aid of the Specialist team, between January and June.

Through these programs, it has been anticipated that students will become acquainted with the world of work in general terms, and with the activities of workers in specific occupations.

Objectives

1. To provide small-group career counseling to students at Wanamaker and three feeder elementary schools.

2. To provide career information to CDCs at Wanamaker and participating elementary schools.

3. To help CDC's in participating Wanamaker area schools plan a CD program incorporating (a) outside speakers from local businesses, (b) visits to local enterprises, and (c) a career-information display in each school.

Observations and Findings

Between February and April, 1972, six visits were made to various sites of CDS activities: four for conferences with the CDS, and two to observe the program in action at Wanamaker and one of its feeder schools (Elverson). Small-group counseling sessions began at Wanamaker in March, and at Elverson in April. The program at a second feeder school (Harrison) did not begin until early May.

Objective 1, to provide small group career counseling, was achieved at Wanamaker and two feeder schools: Elverson and Harrison. Thirty-three Wanamaker students (12 seventh-, 11 eighth-, 10 ninth-grade) participated in weekly sessions, by grade, between March and the end of the school year. Students were referred by their teachers on the basis of categories designed by the CDS: (a) potential dropout, (b) adjustment problem, (c) not performing up to potential, and (d) well adjusted. After this step, students who participated did so on a voluntary basis. The CDS then chose students for each grade group in a manner that would ensure as equal a representation as possible of each of the four categories in each of the three groups.

Topics covered in the 60- to 90-minute sessions included self and community awareness, as well as specifically career-oriented materials. Examples of the latter category included (a) assessing students' interests in, and knowledge of, careers, (b) reading and completing job-application forms, (c) learning about taxes, social security, and personal money matters, and (d) limited "hands-on" experience with tools and equipment.

The programs at Elverson and Harrison were similar to that at Wanamaker. Materials on a simpler level were used, however, and games were observed to be used, for self-awareness and learning activities, a far greater percentage of the time than was the case with junior high students. The 16 student participants at Elverson were in grades three and four in one group, and five and six in the other. Six sixth-grade pupils from Harrison participated in the program during May. Sessions at Harrison were halted during June for graduation preparations. In both elementary schools, pupils were chosen chiefly from the "well adjusted" category (all six at Harrison and nine of the 16 at Elverson were classified as well adjusted by their teachers).

According to the CDS, a third elementary school was not chosen because of both a shortage of time, and major administrative changes in two schools originally viewed as potential participants.

Objective 2, to provide career information to CDC's, was fully achieved at Wanamaker and Elverson. Since no permanent CDC was formed at Harrison, materials were supplied directly to pupil participants by the CDS. Informational and counseling materials were revised and simplified by the Specialist team, particularly for the use of the elementary pupils. Sample copies of these materials may be obtained from the Office of Instructional Systems Research.

Informational materials included pamphlets and brochures received from business and government agencies. Counseling materials included various assessment forms, attitude and opinion inventories, and learning "games."

Objective 3, to help CDC's plan a CD program, was fully realized only at Wanamaker. According to members of Wanamaker's CDC and the CDS, the latter was instrumental in arranging (a) visits to local businesses, such as the Electric Company, the Gas Company, and a number of hospitals, (b) speakers from such enterprises, and (c) the addition of a considerable amount of material to career-information displays in the school. Two such displays, one in the library and one in the career-guidance room, were observed during monitoring visits to Wanamaker.

According to the CDS, the goals and details of the CD program, including the purposes and activities of the small-group counseling phase, were discussed, on more than four occasions, with Elverson's CDC. These meetings were viewed as preparatory to expanding the program at Elverson during the coming year. None of the specific objectives were achieved at either Elverson or Harrison during the past year, however.

Conclusions

Considering that it did not start until midyear, the CDS project succeeded in achieving most of its objectives. Counseling sessions were conducted at three participating schools. Career information was shared with CDC's at two schools. A comprehensive CD program was undertaken at Wanamaker.

The strongest element of this project was the initiation of small-group career-counseling sessions with interested students. Although these sessions took place on a limited basis during the past year, their continuation and expansion during the coming year is viewed as a positive addition to the total Career Development program. Possibilities are currently being considered and instruments are being explored, to evaluate the effects of such sessions on increasing students' awareness of their own career interests, as well as their knowledge of career alternatives available to them.

PROJECT VIEW
Project Number 11

Project Area: Career Education

Project Director: Mr. Mason M. Moton

Project Manager: Mr. Mason M. Moton

Location: 5th and Luzerne Streets

Number of Students Served: None

Official Proposal Number: None given

Starting Date of Project: Not begun

Category: Part B, Regular, Disadvantaged

Funds Allocated: None

The Project

The Office of Career Development was to produce several series of self-instructional microfilm-audiotape units on careers. These units were to provide information to junior high school students on careers, which, according to projected labor-market needs, will require personnel in the future.

Objectives

To produce self-instructional microfilm-audiotape units on careers for use in Philadelphia junior high schools.

Observations and Findings

Project VIEW did not receive funds for the 1971-1972 academic year. Consequently, the project was not implemented.

Conclusions

Although the project did not operate during 1971-1972, a project with similar objectives (Penscript) has been funded and will be implemented in 1972-1973.

CAREER DEVELOPMENT LABORATORY (MOBILE)
(Project Number 12)

Project Area: Career Development

Project Director: Mr. Mason M. Moton

Project Manager: Mr. Frederick C. Johnson

Locations: Bus Schedule 1972:

	From	To
1. Cedarbrook Campus	2- 1-72	2-11-72
2. Progress Plaza	2-18-72	2-25-72
3. Wagner Junior High	2-28-72	3-10-72
4. Leeds Junior High	3-13-72	3-31-72
5. Roosevelt Junior High	4- 3-72	4-21-72
6. Wanamaker Junior High	4-24-72	5-12-72

Number of Students Served: Approximately 8,000

Official Proposal Number: 22-1038

Starting Date of Project: July 1970 for Equipment; February 1972, Bus in operation.

Category: Disadvantaged

The Project

"Career Trails" is a career-information program on wheels. It operates on a school bus which has been refurnished to accomodate the program. The Lab is a single unit used by a limited number of schools at the Junior High level. On nearly all locations, the bus is parked in the yard, and connected into the school's electrical system. It remains on each school site for several days while individual classes visit to explore, observe, and gain information about the cluster of careers being featured.

The program was initiated because there is not sufficient staff, school space, equipment or materials within the school setting to provide students the kinds of career information and hands-on experience the unit offers.

Objectives

1. To provide students information about current and projected careers having the highest priority, as determined by manpower needs;

2. To help students develop a more positive self-image; and

3. To motivate students to make plans early for careers and to choose and apply themselves in the requisite academic and/or technical courses.

This year the evaluation was focused primarily upon program development and student reactions. Answers to the following questions were sought:

1. What are the operational characteristics of the mobile unit?

2. What was the program content, and how was it selected and presented?

3. How did the students react to the mobile career concept?

Observations and Findings

From February to May 1972, the bus was seen at five locations for a total of seven visits. In addition, special meetings were attended with the Project Manager and with individual coordinators at the school sites. Observations and/or meetings ranged from a minimum of forty minutes to a maximum of one hour and fifteen minutes. Six of the observations were in District 6, and one in District 5. District 6 was the focus for 1971-1972 because of the enthusiasm of the schools within the district to program concepts.

At each school a Career Development committee, headed by either the Vice Principal or a Department Head met on a regularly scheduled basis for staff development purposes, with the Project Manager of the mobile unit. This person schedules all the classes in the pre- and postvisit activities.

Classes were sent out to the bus at the beginning of each period and were escorted to the bus by that period teacher. Observed class sizes ranged from a minimum of 20 students to a maximum of 36 students. A full class period was allowed for the presentation. Students saw a 25-minute filmstrip on health service careers in all schools. Brochures were distributed, and a question-and-answer period took place. Pupils stood or sat on available floor space. It was learned that the brochures and other software were obtained from various agencies or made up by the program manager. Some hardware is owned by the program and other is available when needed.

The career clusters were chosen according the current and projected manpower needs as reported in "US Manpower, Opportunity and Challenge", Department of Labor, Washington, D.C.; the Bureau of Labor Statistics estimated employment projection from 1970-1980 requirements, the Philadelphia Bureau of Employment Statistics, and the Philadelphia SMSA. This year's cluster was on Health-Medical Careers, the priority area, with emphasis on the area of nursing services and careers. Students at Wagner and Leeds saw a filmstrip on Licensed Practical Nursing, and a similar film on careers as a Registered Nurse was shown at Roosevelt and Wanamaker schools.

A questionnaire was presented to 188 seventh- and eighth-grade pupils (seven classes) at the four Junior High Schools to assess the impact of the mobile bus. The questionnaire covered two general areas:

1. Reaction to the physical plant
2. Reaction to content.

Each question was assigned weights, and a total score for the questionnaire determined. On this basis, students who saw the filmstrip on Licensed Practical Nursing, and obtained a score between 0 and 8.4, were considered to have negative attitudes. An obtained score of 8.5 was considered neutral; a score of 8.6-9.9 positive; and scores 10.0 and above, highly positive. Similarly, on the Registered Nursing questionnaire, scores 0-7.8 were considered negative; 7.9 neutral; 8.0-8.4 positive; 8.5 and above, highly positive.

Data received indicated that seventh-grade pupils at Wagner responded most favorably to the demonstration ($\bar{X}$=10.5 where a score of 8.5 was considered neutral). Of the total students responding to the questionnaires, 141 or 75% were either positive or highly positive in their reactions; 20 or 10.6% were neutral; and 27 or 14.4% had negative impressions of the presentation. Average scores for individual schools are shown in Table 1.

Students were asked to rate the filmstrip and to evaluate activities related to the bus visit. A summary of their responses is shown in Table 2. In general, the pupils thought that they had learned something from the bus visit and wished more career-information materials. materials.

TABLE 1

AVERAGE SCORES ON ATTITUDE QUESTIONNAIRE

School	Grade	Number of Pupils	Mean Score	Neutral Score
*Wagner	7	20	10.5	8.5
	8	21	9.0	8.5
*Leeds	7	25	9.3	8.5
	8	30	9.7	8.5
**Roosevelt	7	24	8.4	7.9
	8	32	9.0	7.9
**Wanamaker	8	36	8.9	7.9
Total		188		

*Licensed Practical Nurse
**Registered Nurse

TABLE 2

SUMMARY OF STUDENTS' REACTION TO MOBILE BUS, GRADES 7 and 8

Items and Categories	Number of Responses	Percentage of Total Group
1. Filmstrip rating	21	
Very Good	21	11%
Good	63	33%
Fair	64	34%
Not Good	14	8%
No Opinion	26	14%
2. Interest in nursing since lab visit		
Interested	40	22%
Not interested	70	37%
Undecided	76	40%
No response	2	1%
3. Follow-up activities		
Talked about film in class	58	31%
Did not talk about film anymore	76	40%
Made plans to discuss film later	9	4%
Talked with counselor	7	3%
Don't know, or no response	38	22%
4. Impact of filmstrip		
Knows a little more than before	80	42%
Knows a lot more	37	20%
No more than already knew	43	23%
Not sure, or no response	28	15%
5. Physical comfort of bus		
Too hot	42	22%
Too cold	32	17%
Quite comfortable	34	18%
Don't remember	55	30%
No response	25	13%
6. Impact of bus visit		
Like to visit bus again, to see other careers	60	32%
Like to see other careers, but not on bus	83	44%
No opinion	37	20%
No response	8	4%
7. Carry-over activities:		
Took papers from lab home	58	31%
Put papers in locker	16	9%
Gave papers to friend	6	3%
Threw papers away	31	16%
Misplaced the papers	13	7%
Don't remember	55	29%
No response	9	5%
8. Some of the filmstrip missed		
Pupil too short	28	15%
Pupil was late	2	1%
The screen was too small	25	13%
The ceiling was too low	42	22%
Don't remember	62	33%
No response	29	16%

Conclusions and Recommendations

This was the first year of the unit's operation. Its main objective was to enhance career awareness through services to students. It appears that the program has a clearly defined goal in career motivation and is meeting this aim. Seventy-six percent of the sample expressed interest in seeing other careers, indicating that there was a positive impact. However, more than half of this number did not want to go on the bus again. In responding to the question regarding the physical comfort of the bus only 18% found it quite comfortable. (It must be noted that 30% did not remember, and possibly could be included in the "quite comfortable" category.)

The physical plant appears to be the chief weakness in the program. The ceiling is low, lighting and ventilation are poor, the aisle is narrow. The unit as it presently exists cannot comfortably accommodate numbers greater than 20. Even with this small number, variations in student stature present unresolved problems. The positive carry-over from the visit substantiates program merit since most students have an aversion to standing for a 40-minute period. The relaxed atmosphere of the bus in general appeared to be a positive contribution to the presentation.

The project appears to be functioning as intended; namely, to provide career information to students. It is in the pilot stage, limited in scope by less-than-adequate facilities and materials.

As the program expands in student population and physical accommodations, an in-depth assessment can be conducted.

PROJECT ABLE
Project Numbers 13/14/35

Project Area: Trade and Industry

Project Director: Mr. William Rudder

Project Manager: Mr. Leroy Mohn

Location:	Regular	Mastbaum High School*
	Disadvantaged	Franklin, Overbrook, and West Philadelphia
	Handicapped	Carroll

Number of Students Served:	Regular	Approximately 80
	Disadvantaged	Approximately 60
	Handicapped	Approximately 16

Official Proposal Number:	Regular	01-23/10-1191
	Disadvantaged	01-33/10-1191
	Handicapped	03-12/1303

Starting Date of Project: September 1970

Category: Part B, Regular
Part B, Disadvantaged
Part B, Handicapped

The Project

Project ABLE evolved over a 5-year period in Quincy, Massachusetts, as a joint effort by school staff and outside industrial consultants. Its emphases are individualized instruction, course content derived from detailed job and task analysis within broad vocational areas (job clusters), and student "spin-off" at various levels of employability. Project ABLE utilizes the systems approach to deal with underachievers with a history of disinterest, truancy, and failure. While progress toward behavioral objectives is measured, there are no "failures" and no one is "left behind."

In the Philadelphia realization of Project ABLE, instruction is offered in two job clusters: power mechanics (auto shop) and woodworking. Local development is being carried on principally by Mr. Anthony Dienno, a teacher at Mastbaum, and Mr. Charles Fareira, a teacher at West Philadelphia.

*NOTE: Dobbins A. Vocational-Technical High School could not participate as originally planned because the auto shop instructional staff has been reduced.

Instructors are provided with instructional units, in booklet form, incorporating reference material, instruction sheets, work-station assignments, and tests. Equipment is also provide for the auto shop students, consisting mostly of labeled trays of tools corresponding to the instructional units. In addition, each class is provided with a tracking board, which displays the units each student has completed. The booklets are designed to handle routine instructional tasks (e.g., "Pick-up tool tray #1"). It is believed that this will enable the teacher to spend more time with each student--thus individualizing instruction.

Objectives

1. To increase instructional effectiveness by means of the systems approach.

2. To reduce the incidence of manifested student disaffection (e.g., truancy, disciplinary incidents).

3. To help students develop employable skills.

Observations and Findings

During the 1971-1972 school year, two observers visited the project locations a total of twenty times. Instruction was in progress on sixteen of these occasions. In addition to anecdotal records, checklists were used to record the observations; the notations made on the checklists are summarized in Table 1. Several conferences were also held with the director, Leroy Mohn.*

Mastbaum and Overbrook were the only two schools in which Project ABLE functioned approximately as intended. At Mastbaum, two 10th-grade (Level I) power mechanics (auto) classes, one 11th-grade (Level II) power mechanics class, and one 10th-grade woodworking class used the ABLE program and materials. At Overbrook, a 10th-grade woodworking class used them. Elsewhere the materials and techniques were used to a limited extent or not at all, as detailed below.

As will be seen from Table 1, the students who were observed were generally interested and diligent in their learning endeavors. This was as true in the schools where the ABLE techniques and materials were used minimally as in the schools where they had maximal use. (If the columns of Table 1 are assigned weights equal to their column numbers and the resulting scores are tabulated for Mastbaum and Overbrook observations on the one hand, and for West Philadelphia, Carroll, and Franklin observations on the other hand, on questions A through E, then the mean score for the former group is 1.34, for the latter 1.30, with variances 0.4 and 0.2 respectively. These means are not significantly different at any reasonable confidence level, not even the 50% level.) Thus it may reflect the competence of the teachers rather than the efficacy of ABLE.

*NOTE: Mr. Mohn is no longer with the School District.

TABLE 1

SUMMARY OF TWENTY OBSERVATIONS

Item	Observation				
	1 Always	2 Usually	3 Mostly	4 Rarely	Not observed or not applicable
1. Does student understand what he has to do?	11	2	1	0	6
2. Does student know where to obtain materials?	13	1	0	0	6
3. Does student promptly report task completion?	7	5	0	0	8
4. Does student seem interested in his work?	11	3	2	0	4
5. Are material trays completely stocked?	9	0	1	1	9
6. Are work centers set up?	9	1	0	2	8
7. Are mock-ups used effectively?	5	1	1	4	9
8. Are slides used effectively?	1	0	0	6	13
9. Are slides-with-sound used effectively?	1	0	0	6	13
10. Are books used effectively?	7	2	1	4	6
11. Are mimeo sheets, hand-outs used effectively?	10	1	1	2	6
	1 Nearly all	2 More than half	3 Less than half	4 Very little	Not observed or not applicable
12. Proportion of student time spent on task.	9	5	1	0	5
13. Proportion of teacher time in individual instruction.	11	2	0	2	5

Most of the local ABLE development was the work of one Mastbaum instructor, who also taught the Level II power mechanics class there, developing appropriate new materials as he went along, particularly sound-on-slide presentations. Thus the other two ABLE instructors at Mastbaum were encouraged by example and by the availability of experienced counsel to make the best use of the ABLE techniques and materials. Nevertheless, one instructor preferred his own techniques, materials and testing and scoring procedures, which he had developed over the preceding five-year period, and used them almost exclusively. The other used the ABLE materials as much as he could, although he found he had to make substantial modifications because his woodworking machinery differed from that used in Quincy, on which many printed materials were based, and also because his students encountered difficulty in reading the explanations. (The latter problem seemed to be universal, although not as serious at Mastbaum as elsewhere.) He also had to rewrite many of the test questions because they had many defects (e.g., extraneous cues or more than one plausible answer to a multiple-choice question). Both tenth-grade instructors fell back on group demonstrations from time to time, although most instruction was individual. All in all, it cannot be said that the ABLE pattern was followed completely at Mastbaum. (Departures from the pattern were even greater elsewhere.)

By January, 1972, the average number of instructional units completed by 41 students in the tenth-grade auto classes at Mastbaum was 24.8; the 21 woodworking students had completed an aggregate of 85 units. with a mean test score of 92 percent correct.

At Carroll School the project was unable to operate as planned because all of the shop equipment assembled for it was stolen the preceding summer. The instructor's requests for replacements were fruitless; lack of funds was cited. Accordingly, the instructor has had to improvise. He has combined the use of project booklets with his previous cooperative program, in which students are sent out to work in neighborhood gasoline stations.

Overbrook, Franklin, and West Philadelphia fall into the disadvantaged category. Of these, only Overbrook had a class (tenth-grade woodworking) that followed the ABLE pattern, despite difficulties. (Example: in sub-booklets entitled KNEEHOLE DESK PARTS.ASSEMBLY the main units (#13,14) are missing.) At West Philadelphia it was not possible to formally schedule Project ABLE, but one instructor, who had participated enthusiastically the previous year in the ABLE development, used the materials with a tenth-grade auto class, despite the fact that it was scheduled to meet for only one period each day. No meaningful assessment of results at West Philadelphia could therefore be made. At Franklin the ABLE program was inaugurated in a tenth-grade auto class in December, but the very low-level reading ability of the class made it impossible to use the printed materials, and the class tended to be conducted expertly but conventionally. The instructor succeeded in individualizing the instruction and retaining the interest of the students.

Two universal complaints are lack of funds for the required equipment and inability of the students to read the materials. Most instructors invested some effort in revision of the materials to employ simpler vocabulary. One teacher had prepared many color photographs and tapes to supplement the printed materials.

Conclusions and Recommendations

Project ABLE printed materials were usable, with modifications, at Mastbaum. Tool trays and tools were utilized fully. Teachers at Mastbaum differ in the degree to which they will accept ABLE techniques and materials.

Elsewhere students could not read the printed materials; however, they could learn the shop skills associated in them. Teachers used a judicious combination of individual attention and group instruction to achieve the ABLE goals. It is doubtful whether this sort of technical material can be rewritten at the reading level of disadvantaged students.

If further funding is available for Project ABLE, it is likely that best results could be achieved by allocating it among shop teachers to be spent according to their individual judgment. It is particularly important to minimize the delay between perceiving the need for an item and acquisition of that item.

WORK EXPERIENCE (WORK-X) PROGRAM--A PHASE OF THE EDISON PROJECT
(Project Number 15)

Project Area: Trade and Industry

Project Director: Mr. Albert I. Glassman

Project Manager: Mr. Harold R. Kurtz

Location: 4th and Clearfield Streets, Philadelphia, 19133

Participating Schools: Edison High School

Official Proposal Number: 28-1018

Starting Date of Project: September, 1971

Category: Part B, Disadvantaged

The Project

Prior to the implementation of the program in September 1971, the funding source changed from the Commonwealth of Pennsylvania to Title VIII, ESEA, and Work-X became a part of the Edison Project. All elements of the program remained the same in terms of rationale and objectives.

The work experience program evolved from a concerted effort by the Edison Project and Edison High School staffs to provide high school sophomores with a more realistic perspective of the job market, the qualifications for the variety of entry-level jobs, and requirements for vertical mobility. The program was designed to integrate the students' personal interests, skills, or talents with the vocational heights to which they aspired. In addition, various academic activities were to evolve in order to make the experience more meaningful.

The Edison Project students were to be phased into Work-X, which operated out of Edison High School, as a part of their total school program. Students were supposed to follow a planned itinerary of visits to many major commercial, industrial, and community-service organizations. It was proposed that students visit these participating firms two days a week, two hours each day, for four to five weeks. In September 1971, there were 24 major firms cooperating with Edison High School in Work-X. If a student were to follow the planned itinerary of visits, he would rotate through the many departments of each firm speaking to and observing workers with a wide variety of occupational skills.

Product Objectives

1. Sixty percent of the project students will have formulated a career objective as revealed in structured interviews.

2. After one year in the program, those students who have formulated a career objective will be able to describe for that career, job characteristics, advancement opportunities, training necessary for entry and advancement, salary ranges, working conditions, and labor union relationships.

3. In a role-play interview, students will not only answer all questions directed to them candidly and accurately, but will themselves ask questions of the interviewer designed to obtain specific information about the wages, conditions, and responsibilities of the job being sought.

Process Objectives

The Career Development Specialists will do the following:

1. Administer to each student on entry into the program a vocational interest inventory.

2. On the basis of information supplied by this inventory and review of students' records, conduct at least once during the year an in-depth counseling session with each student; this session will focus on career planning and integration of the student's career objectives with his academic program.

Management-Process Objectives

1. The Career Development Specialists will get commitments from at least twenty-five businesses in the Edison High Community to allow student observations of their operations and to provide part-time and full-time work for project students.

2. The Career Development Specialists will keep a record of all contacts made with commercial, industrial, and government agencies in order to develop a pool of contacts to be utilized by the instructional teams.

3. The Career Development Specialists will prepare a monthly report of these contacts which will be submitted to the project director for his review.

4. The Career Development Specialists will seek and receive endorsements of the project and its objectives from at least three major business, industrial, governmental, union, or professional organizations.

Observations and Findings

All students in the project have received at least one structured interview in regard to career and academic planning. This counseling included discussions on the current job market, available training programs, and the student's individual score on the Minnesota Vocational Interest Inventory. Most students have indicated one or more career objectives. No formal evaluations have been made of the impact which the work experience program has had on these career decisions primarily due to the many deficiencies in the work experience program which are described below. Also, no assessments have been made of students' abilities to describe job characteristics, advancement opportunities, training, or salary ranges in any formal manner. Informally the responses of students have reflected gross misconceptions regarding their chosen occupational areas.

Several sessions were conducted by the Career Development Specialist focusing on the job interview by means of role playing. The Career Development Specialist collaborated with the various teams' self-contained classes, so that these activities could be reinforced in the specific classes. As in the above situation, no formal assessments have been made of the students' abilities to present thoughtful questions regarding wages, conditions, and responsibilities of the occupation to which one aspired.

The Career Development Team has made 38 visitations to the private sector in order to persuade these companies to be participants in one or more of the following activities which related to Work-X: (a) work experience, (b) work stipend, and (c) learning station.

Because of previously mentioned logistical and personnel problems, solicitation of private sector participation did not become very active until early in December 1971.

Thirteen companies were unable to involve themselves in the project for numerous reasons. Some expressed the view that their activities were unsuitable for broadening the students' horizons. Some felt that their limited facilities precluded students' making meaningful observations. One company's commitment to the entire Philadelphia School District prevented it from participating in the Edison Project during this past year. Another problem has been the inability to obtain commitments from community-based businesses. The successes that the career development personnel had were in large part due to their abilities to persuade business in the greater Philadelphia area to participate.

The project was unable to organize and implement work-experience programs until April 1972. At that time work exposure trips were initiated with three private sector companies. Six additional commitments have been obtained for the 1972-1973 school year. Four companies provided positions for 60 percent of the Edison Project students. The project provided the funds for student stipends. One additional company has agreed to provide work-stipend positions during 1972-1973. One work

station was established in a community-based manufacturing company. This operation will continue during 1972-1973. In total, five companies have been involved in the Edison Project in the areas listed above. Seventeen have committed themselves to participation in the 1972-1973 program. (See Table 1.)

TABLE 1

BUSINESS PARTICIPATION IN WORK-X AND RELATED PROGRAMS

1971-1972	work station	1
	work stipend	4
	learning station	0
	work experience	3
1972-1973	work station	1
	work stipend	6
	learning station	1
	work experience	9

The Career Development Specialists enjoyed greater success as a result of their contacts with the public sector. In total, 22 visitations were made. Eleven agencies were actively involved in work-stipend programs. Failure to broaden agencies' involvements in work-experience, work stations, or learning stations was a direct function of the late start in implementing career-development operations. Four additional agencies have made commitments to involve themselves in work experience or related programs during the school year 1972-1973. Table 2 indicates the public sector's participation in the Edison Project's career-development programs during the year 1971-1972 and projections for the school year 1972-1973.

TABLE 2

GOVERNMENTAL AGENCIES PARTICIPATING IN WORK-X AND RELATED PROGRAMS

1971-1972	work experience	0
	work stipend	11
1972-1973	work experience	3
	work stipend	12

The Career Development Specialists have constructed and maintained continuous records of the contacts made with industrial, governmental and commercial agencies. This information was made available to the instructional teams of the project. A monthly reporting of these activities was submitted to the Project Director for the purposes of evaluation and planning.

The Career Development Specialists have been unable to seek industrial, commercial, or professional organizations' endorsements of the project and its objectives because other priorities precluded such involvement. Efforts will be made to focus more attention in this area during the summer of 1972 and early in the 1972-1973 school year utilizing the assistance of the administrative personnel of Edison High School and the Edison Project.

Conclusions and Recommendations

The Career Development Specialists have had to overcome a number of problems in order to effectuate a more viable work-experience program. The task of establishing and coordinating work-stipend positions required more time than anyone had anticipated. A variety of logistical procedures had to be defined and made operational. During this period role definitions had to be altered or eliminated. Partially as a consequence of this as well as personnel turnover and illness, there was an initial delay in implementation of a career development program.

Most of the problems have now been resolved. One of the Career Development Specialists has been given principal responsibility for coordinating the work-experience program. Job descriptions have been written more precisely. Alternate "tracks" adapted to students' characteristics have been spelled out. (Nevertheless the goal of establishing work experience as one of the central parts of the project curriculum has remained unfulfilled.) The project will attempt to alter this situation by making several significant organizational adjustments.

First, work experience as one element of career development will be under the auspices of the Manager for Instruction. The coordinator of Career Development will report directly to the Manager for Instruction.

Secondly, a curriculum research team will obtain from the coordinator of Career Development important information regarding work experience from which units can be developed for classroom utilization

Finally, the recent deployment of staff will now enable several members from various components to provide additional support in developing meaningful work experience-opportunities in a more diverse array of business and organizations.

STAFF DEVELOPMENT (T & I) SUMMER WORKSHOP AND FOLLOW-UP
Project Number 16

Project Area: Trade and Industry

Project Director: Dr. William Kelly, Director, Kennedy Center

Project Manager: Wilbert Rudder, Assistant Director, Trade and Industry

Location, Summer Workshop: Kennedy Center

Location, Follow-Up: Bok, Dobbins, Mastbaum, Frankford, Germantown, Gratz, Overbrook, Roxborough, Carroll, Kane, E. S. Miller, Olney

Number of Students Served: 2,500

Official Proposal Number: 01-21/10-1191

Starting Date of Project: July 1, 1971

Category: Part B, Staff Development

The Project

In order to increase the effectiveness of vocational education in Philadelphia in training students to enter the job market with entry-level occupational skills, as well as to improve attendance in vocational classes, the Division of Vocational Education has instituted an IPI (individualized-personalized instruction) approach to designing vocational curricula. These curricula, to be used in vocational, senior high, and certain special schools (handicapped, retarded, etc.), are in preparation for the skills centers to be opened in Philadelphia in the next several years. Since using this approach entails educating teachers to employ IPI systems concepts in their lessons, a staff development program was undertaken at Kennedy Center during July 1971. Twenty-two teachers, from twelve schools, participated in the program to learn to rewrite their present curricula using the new system.

During the summer, participants developed instructional modules in five areas (needle trades, electronics, metals, autographic projection and health) to serve as models for new units to be written during the year on the teachers' own time. These modules were to include macroanalyses of each career or job cluster, hierarchy charts of tasks within each job, step-by-step instructions (written, pictorial, audiovisual) for completing each task, performance criteria, and validation criteria to provide feedback needed for revision of the unit as well as information on student progress.

An instructional systems approach was employed by the instructor during the workshop. Each participant was provided daily with a detailed IPI lesson guide. Lectures and other forms of teacher-centered instruction were used more extensively during the initial phase of the workshop than toward the end. In the final week of the workshop, participants presented the "test" modules they had developed. This exercise was used to validate each module, and led to revision where necessary. Thus, the summer program succeeded in assisting teachers to acquire skills which permitted them to revise their present curricula on their own.

Objectives

To assist participants designing lesson units in Vocational Education subjects using IPI systems-design concepts.

The operational definition of an IPI unit includes the following criteria:

1. A macroanalysis of the career or job cluster,
2. A hierarchy chart of tasks within each job, or
3. Specific instructions for completing a given task:
   a. terminal performance objective (TPO),
   b. pretest,
   c. description of tools to be used,
   d. description of work station,
   e. step-by-step procedure,
   f. multimedia materials for student use,
   g. posttest.

Observations and Findings

The summer staff development program, described above, was monitored on a weekly basis. During the workshop, participants were interviewed informally regarding their attitudes toward the purposes of the program, the manner in which sessions were being conducted, the instructor and his materials, and their plans for incorporating IPI concepts into their instructional programs. Attitudes were all highly positive toward all these issues. The 100% participant attendance and the fact that each person has participated in the construction of at least one sample module are indicators of the success of the summer program.

Between October, 1971, and May, 1972, fourteen observations were made in five of the 11 participating schools. These schools were Bok, Dobbins, Gratz, Mastbaum, and Roxborough. Fourteen of the 22 participants in these five schools were visited. In addition, all 22 teachers were contacted by mail and/or telephone, and requested to submit copies of all units produced. Copies of these units, as well as of units produced during the summer workshop, can be obtained from the Office of Instructional Systems Research. A summary description of all units produced during the school year may be found in Tables 1 and 2.

TABLE 1

IPI UNITS RECEIVED FROM PARTICIPATING SCHOOLS

SCHOOL	TYPE OF UNIT			
	Macroanalysis	Hierarchy Chart	Instructional	Total
Bok	1	5	2	8
Carroll	-	-	3	3
Dobbins	1	2	2	5
Gratz	1	1	2	4
Mastbaum	2	-	1	3
Olney	1	1	1	3
Roxborough	2	1	3	6
TOTAL	8	10	14	32

As Table 1 indicates, 32 IPI units were produced by participants in seven of the 12 schools: eight macroanalyses (overall course content), 10 hierarchy charts (specific job/task analyses), and 14 instructional units.

The Office of Instructional Systems Research evaluated all instructional units submitted on the basis of their conformity with IPI criteria, provided by the Division of Vocational Education for Trade and Industry.

TABLE 2

CRITERIA MET BY EACH IPI INSTRUCTIONAL UNIT

Area	School	Participants Involved	Title	TPO	Pretest	Tool Description	Work-Station Description	Step-by-Step Procedure	Multimedia Materials	Posttest
Needle Trades	Eok	3	Identifying Major Power Machine Structures	x	x	x	x	x	x	x
			General Function of Major Parts	x	x	x	x	x	x	x
	Gratz	1	Procedure for Cafe Curtains			x	x	x	x	
			How to Pin-Fit an Ottoman			x	x	x		
Electronics	Olney	1	110 Volt Three Point Control Circuit	x	x	x	x	x	x	x
	Dobbins	1	Fundamentals		x	x	x	x		x
			Trouble-Shooting	x	x	x	x	x		x
Health, Grooming	Carroll	1	Making a Bed			x	x	x	x	x
			Collecting and Labeling Specimens			x	x		x	
			Bed Bath			x	x	x	x	
	Mastbaum	1	Fingerwaving	x	x	x	x	x		x
Autographic Projection	Roxborough	1	Alphabet of Lines	x	x	x	x	x	x	x
			Sectioning	x	x	x	x	x	x	x
			Screw Threads and Fasteners	x	x	x	x	x	x	x

Table 2 shows that nine participants produced the 14 instructional units. These units varied in completeness. Six (43%) were judged to fulfill all seven criteria. Three more (21%) met all but one of the criteria (multimedia materials). Five (36%) were found lacking a pretest, and four (29%) a posttest. The most common deficiency was the absence of a terminal performance objective written in behavioral terms. This was the case in six (43%) of the units submitted. All teachers interviewed during the year expressed concern over the difficulty in acquiring multimedia materials. A limited budget for such supplies is viewed as a major reason for their absence in most units produced.

The chief concern of all those interviewed, however, was the shortage of time available to work on developing IPI units. In only one school (Bok) was partial release time given to a teacher for this purpose, however, this release time was scheduled to other activities. At least eight (57%) of the units submitted were produced as part of a college course attended by the participants or through a separate funding source (i.e., Urban Coalition).

No follow-up session on the development of IPI units was held for these participating teachers.

Conclusions and Recommendations

Ten participants (45%) produced IPI units during the 1971-1972 academic year. Most of these units were produced as part of an activity sponsored by a source such as the Division of Vocational Education for Trade and Industry. Although participants were observed to be enthusiastic about the summer workshop and eager to implement the concepts introduced, relatively few units were developed during the year by the group as a whole.

The teachers interviewed, and those who responded to a mail contact, attributed this low rate of production to a shortage of both time and financial support. Similar programs were conducted at Kennedy Center during the year, but few of the original participants were involved in these, since they were chiefly intended for teachers of specially disadvantaged and handicapped children

All teachers interviewed expressed a highly positive attitude toward the objectives of the program, and indicated a desire to be given more time to devote to curriculum development during both the summer and the academic year. The survey, interviews, and data suggest that more IPI units could have been developed over the year had release time or other compensation program been made available to the participants.

STAFF DEVELOPMENT FOR JUNIOR HIGH AND MIDDLE SCHOOL COUNSELORS
Project Number 17

Project Area: Pupil Personnel

Project Director: Helen Faust, Director, Pupil Personnel

Project Manager: Margaret Carson, Assistant Director, School Counseling

Location: School District Administration Building

Participating Schools: Catto, Lea, Sulzberger, Tilden, Audenried, Barratt, Masterman, Vare, Bartlett, Boone, Stoddart-Fleisher, Beeber, Gillespie, Shoemaker, Strawberry Mansion, Jones, Penn Treaty, Stetson, Wanamaker, Leeds, Pickett, Roosevelt, Wagner, Cooke, Harding, Fels, Lincoln, Washington, and Wilson.

Official Proposal Number: 01-41/0-32/10-1191

Starting Date of Project: October 1971

Category: Part B - Staff Development

The Project

A staff development workshop of 10 two-hour sessions was sponsored jointly by the Divisions of Pupil Personnel and Vocational Education. Thirty-one counselors, from 29 schools, attended the workshop, which ran from November 1971 through January 1972. The goal of the project was to broaden participants' awareness and knowledge of careers, thereby enabling them to provide their students with improved career counseling.

Following participation in the workshop, counselors were charged with the task of bringing the concepts presented back to their respective schools, thereby facilitating the expansion and improvement of guidance programs. Students and their parents will, it is assumed, be better able to make educational plans, based on career interests and knowledge, as a result of this strengthened guidance program.

At the conclusion of the workshop, a report was drafted, detailing recommendations for junior high school guidance which arose from the ten sessions. This report is a summary of a report that was drafted by the participants.

Objectives

1. To provide participants with

a. specific information about the curricula of comprehensive, vocational-technical, and magnet high schools;

b. information about the course requirements for admission into the various educational programs offered;

c. information about career alternatives;

d. a generalized background of the local labor market, occupational trends, and projections of future employment needs;

e. information on admission requirements of various post-high school educational programs.

2. To produce a written report on recommendations, arising from the workshop, for an improved eighth-grade guidance program.

Observations and Findings

Each of the ten sessions was monitored, using a locally developed observational checklist. (A copy of this checklist may be obtained from the Department of Instructional Systems Research.) With minor exceptions (e.g., a speaker's last-minute cancellation), the proposed agenda was adhered to and information was provided on each proposed topic.

The workshop program included the following:

1. Presentations by management representatives of the School District, government, and private and community organizations on topics such as characteristics of junior high school students, alternative educational and guidance programs, school planning, work experience for junior high students, job-market projections, post-high school training and apprenticeship opportunities, and decision making.

2. Panel presentations by participants on current counseling techniques, and existing educational and guidance programs in Philadelphia senior high and vocational-technical schools.

3. Field trips to senior high and vocational-technical schools.

4. A meeting with parents.

5. Writing recommendations for revisions in the existing eighth-grade guidance program.

The participants' report, drafted at the conclusion of the workshop, summarized many of the learnings provided during the ten weeks, and recommended several courses of action to be followed for improving the present eighth-grade counseling program.

Recommendations included the following:

1. Providing students with decision-making techniques, based on the College Entrance Examination Board (CEEB) publication Deciding: A Leader's Guide;

2. A "must" reading list for informed counselors, including

(a) CEEB. A Chance to Go to College. N.Y.: 1971.

(b) Whitfield & Hoover. Guide to Careers through Vocational Training. San Diego: Knapp.

(c) Division of Guidance Services. A Guide to Specialized Training Institutions in Pennsylvania. Harrisburg: Pa. Dept. of Education.

(d) U. S. Dept. of Labor, Bureau of Labor Statistics. Occupational Outlook Handbook. Washington, D.C.: U. S. Government Printing Office;

3. Techniques for sharing career information with faculties, students, and parents, including

(a) the formation of a career-planning committee to organize career-oriented programs for each school;

(b) conducting group-counseling sessions with students;

(c) increasing the amount of individualized attention devoted to each counselee;

4. A catalog of resources available to counselors through the School District and other agencies, to further increase their knowledge of resources and alternatives available to their students. A copy of the participants' report is available on request, through the Department of Instructional Systems Research.

Conclusions and Recommendations

The staff development workshop was successful in delivering the services stated in its objectives. The scheduled activities adhered to the criteria, and a report was produced. To follow up the subsequent activities of each participant is another task, to be undertaken during the next academic year. Informal interviews conducted with a number of participants during, and following, the workshop indicated that many of them are, at present, taking an active role in the Career Development programs in their schools.

ROOM TO GROW
Project Number 18

Project Area: Pupil Personnel

Project Director: Miss Helen Faust

Project Manager: Mr. Paul Juergens

Location: Districts 1 through 7

Number of Students Served: Approximately 2000

Official Proposal Number: 0-33/10-1191

Starting Date of Project: 1967

Category: Part B

The Project

The Room To Grow elementary prevocational guidance program was designed to introduce children to the world of work by means of a program which stresses exposure to people representing a variety of jobs. In addition, it is believed that knowledge of occupations may help the individual to make better vocational decisions.

The fifth- and sixth-grade classes of the Room to Grow segment, funded by the Vocational Education Act of 1968, were given quite a number of guidance sessions within the school year, 1971-1972. Of the total sessions, certain numbers were teacher-led group activities while the remaining sessions were used for guest speakers representing particular occupational categories.

The Room To Grow program operated in individual schools. Approximately 2,000 students were involved. Of the total, 200 to 300 students were observed and used for evaluative purposes. The individual classroom teacher was responsible for coordinating the program with the assistance of a community person who, in most instances, played a major role in contacting community members to be guest participants in the program.

Objective

To enable elementary students to extend their knowledge concerning occupations and the prerequisite educational skills needed for them.

Observations and Findings

A relatively small sample stratified by school location, racial distribution, and socioeconomic levels was used to evaluate this project. The sample was further limited to students enrolled in schools where classes at the same grade level had not been exposed to the Room To Grow program.

Monitoring was done in Districts 1 through 7, between the months of December and May, using the Observational Checklist. In addition, a Room To Grow Questionnaire was administered in December and May to the students involved in the program, and to those students not involved who were selected as the control group. This instrument very simply was a test used to measure how aware the students were of certain professions, job descriptions and titles. Also, a Teacher Opinionnaire was distributed to teachers whose Room To Grow classrooms were used for evaluative purposes. This instrument sought to learn the teachers' feelings concerning the project.

Table 1 summarizes the number of times certain desired conditions were found to exist in the 19 observations made at Room To Grow sites.

When the data of the Room To Grow Questionnaire were analyzed, no significant difference was evident between the experimental and control groups. Table 2 does, however, reveal that some growth in terms of mean score differences between pre- and posttesting for the experimental group was +5.26 points while the control group averaged +3.13 points.

Of the 20 Room To Grow classroom teachers who were asked to respond to the Teacher Opinionnaire instrument, 12 did so. The key findings provided by the respondents to the opinionnaire are summarized in Table 3. The responses of the participating teachers appear quite favorable.

TABLE 1

SUMMARY OF 19 OBSERVATIONS OF ROOM TO GROW

Desired Condition or Activity	Condition Present	Condition Absent	Condition Not Observable
1. Guest speaker present	13	2	4
2. Member of immediate community used as resource	15	0	4
3. Speaker enthusiastic about his career	13	1	5
4. Freedom of students to react w/tchr./speaker	14	1	4
5. Pupils asked questions	14	2	3
6. Teacher/guest speaker answered questions	15	1	3
7. Materials available for laboratory activities	11	4	4
8. Pupils observed doing career research	4	12	3
9. Pupils observed in role-playing activity	6	10	3

TABLE 2

MEAN SCORES ON ROOM TO GROW QUESTIONNAIRE

	Room To Grow	Non-Room To Grow
Pre Scores	36.05	37.85
Post Scores	41.31	40.98
Growth	+5.26	+3.13

TABLE 3

RESPONSES TO TEACHER OPINIONNAIRE ABOUT THE ROOM TO GROW PROJECT

Item	Number of Responses		
	Always	Seldom	Never
1. I would rather introduce career opportunities as a part of regular school curriculum as opposed to a special project.	2	7	2
2. Community members willing to assist in being resource persons.	6	2	0
3. The career guests do much to arouse interest of my students.	8	3	0
4. Procedures for obtaining materials and services are well defined and efficient.	7	5	0
5. My students show a keen interest in learning of world of work.	9	2	0
6. This program is enlarging my students' awareness of world of work.	11	0	1
7. This program is causing my pupils to develop an acceptance for individual differences.	7	4	0

Complementary Data

During the school year, workshops were offered to teachers to assist them in implementing their Room To Grow classroom sessions. Following a workshop held in January 1972, the Vocational Guidance supervisors sponsored an evaluation to learn to what extent the workshops were achieving their goals. Thirty-four teachers participated:

. 87% responded that due to this workshop experience, there was now a better understanding as to why Room To Grow is needed.

. 87% now felt they could better implement the program.

. 87% felt the workshop experience was necessary.

Conclusions and Recommendations

The current project provided the students with a variety of exposures to the world of work by means of resources provided, staff development of their teachers, and the enthusiasm portrayed by guest resource personnel.

The participants in the program tended to be favorable toward its activities, materials, and ideas. Through workbook materials and the experience of meeting and conversing with representatives of the various aspects of the world of work, the objective of enabling students to extend their knowledge concerning occupations and their educational prerequisites apparently is being met. However, the level of awareness increased only slightly when compared to others not involved in the program.

Impact of the program might be improved if introducing of the programs could be more structured in relationship to both students and teachers. Project personnel need to be available more of the time, and possibly present units of study as examples for the classroom teacher.

JOB GUIDANCE COUNSELORS
Project Number 20

Project Area: Pupil Personnel

Project Director: Miss Helen Faust

Project Manager: Samuel Munder

Locations: Lincoln, Gratz, South Philadelphia, West Philadelphia, Edison, Benjamin Franklin, Olney, Roxborough

Number of Students Served: Approximately 4,000

Official Proposal Number: 10-1303

Starting Date of Project: September, 1971

Category: Part B, Staff Development

The Project

Funds were used for eight additional high school counselors, one in each district, to serve as Job Guidance Counselor. These counselors were trained to develop, strengthen, improve, and expand counseling services for those students pursuing a career in fields which did not require a college degree. They coordinated job placement activities within their schools and developed more effective placement procedures.

Objectives

To strengthen, improve, and expand counseling and guidance services for job-bound youth by providing the following services:

1. Liaison between school and other agencies concerned with job-bound students (i.e., Apprenticeship Council, Employment Service, trade and technical schools, vocational guidance section of the Division of Pupil Personnel and Counseling, United Health Careers Committee, etc.);

2. Leadership in developing guidance programs to provide information needed by job-bound pupils (i.e., assuring that adequate and current occupational information in various media is readily available to students);

3. Responsibility for knowing national and local labor-market conditions--particularly those in Delaware Valley, and for channelling such information to other school personnel as appropriate;

4. Consultation with school administrators, curriculum planners, vocational education teachers and counselors about instructional and guidance programs for job-bound pupils;

5. Participation in staff development programs.

Observations and Findings

During the first year of this program, eight persons were appointed from the existing counseling staff at each of the participating schools. Each of these persons was an experienced counselor with knowledge about the school to which he/she was appointed.

The structure and personnel of the program gave full support to two major activities:

1. Attendance at a biweekly staff development meetings and on-site visits to relevant resource centers;

2. Participation in the implementation of programs which insured the attainment of program goals.

Staff Development Activities. These activities were organized by the project manager. Each participating counselor attended bimonthly meetings at the Administration Building. These meetings consisted of . . . a variety of persons from business, industry, Employment Service' and the School District with expertise in this field who provided relevant information.

The general format of these meetings consisted of (a) a formal presentation, with appropriate audiovisual aids, and (b) a questions-and-discussion period following the presentation. An example of the type of service provided through these in-service programs is the two-session meeting held with personnel from the Pennsylvania State Employment Service (PSES). The first session was devoted to a discussion of the specific ways in which the local PSES offices made their services available to students. The second session was devoted to the "Job Bank", a new computerized service which has been instituted to modernize and coordinate PSES's services. The participants and presenters engaged in meaningful discussions, and the participants became familiar with some of the services available to assist the job-bound youth.

Among the many other presenters were personnel from Bell Telephone Company Career Resource Center at Springfield High School, Bureau of Labor Statistics, and Community College.

Another aspect of the program centered around on-site visitations. Visits were made to some of the locations mentioned above, as well as to private trade, technical and business schools. These visits were designed to provide counselors with first-hand knowledge of services available to students. Also, considerable discussion took place with VICS personnel to assist in the coordination of these two vocational guidance efforts.

Participation in implementation of programs. In this phase the Junior Guidance Counselors, in consort with other school personnel, carried out the following activities.

1. Survey of senior class plans. While the format in each school differed, each person carried out some type of vocational planning survey. The surveys were distributed to the senior class and returned to the counselor. From the information provided by the survey, the school counselor associated with the program conducted follow-up interviews with the job-bound students.

2. Recording of post-high school plans. A newly developed form was initiated in each school on a permanent basis to record the post-high school plans of students and to provide a running record of the types of services which have been provided to them.

3. Follow-up. To date, five of the eight schools have developed a newly inaugurated plan for the systematic follow-up of seniors after graduation. These follow-up surveys are planned for late September, a sufficient spread from date of graduation to ascertain the employment experiences of the graduates.

4. Occupational information. While all of the eight schools have established some specific plan to assist job-bound youth, they vary considerably in their focus. DOT printouts, career days, pamphlet distribution, fact sheets, bulletin boards, and career resource centers were used in varying degrees by each of the participating schools. Common to all schools, however, was the coordination effort developed between the counselor and the person in each school responsible for the VICS project. The VICS project disseminates vocational information by means of teletype computer terminals.

5. Individual counseling. In all schools, priority was given to those students who had little or no idea of their future plans. These students were given both initial and follow-up interviews during the school year. This procedure was expanded during this past year as a result of the emphasis upon the job-bound. This procedure is expected to con inue in future years as a result of this training.

6. Group counseling of the job-bound. In seven of the eight schools, some type of group counseling or group guidance was conducted. The emphasis for the most part was upon job readiness. This process has been instituted as a regularly scheduled approach in the procedure for job-bound youth.

7. Visits to industry and industry-personnel visits to schools. The approach to this issue ranged from five separate visits to one school by industrial representatives to single visits to most of the other schools. However, the disparity in personal visits was offset by the number of on-site visits made by all of the participating schools. It is anticipated that the number of such visits will vary from year to year, but the impetus to these visits in the future was provided by this program.

8. Involvement by other school personnel. For the most part, this program involved the commercial and industrial arts and other shop teachers. Two of the eight schools established regular career guidance committees which have become permanent aspects of the school structure. It is hoped that additional efforts can be made to incorporate similar committees in each of the other schools.

9. Placement assistance. This activity varied from school to school and depended upon the type of program within the school. Where schools did not have placement services, "Job-bound" counselors established a working relationship with PSES and Civil Service. They also developed a program for coordination of these and other services with students.

10. Integration of program into curriculum. For the most part, the counselors used the Commerce, Industrial Arts, and Shop classes to achieve this activity. In three schools, the counselor worked with the respective department heads to develop classroom units in readiness and career development.

11. Testing programs. All schools utilized PSES as a resource for testing. Additional testing was coordinated through the English classes (i.e. Civil Service tests). Another resource utilized by 3 schools was the Armed Forces Aptitude Test Battery.

12. Involvement of parents. This activity was present in only two schools. In the main, this has been the most difficult to implement; but the counselors have directed their efforts toward activities which seem to have a greater promise of success. The involvement of parents, however, should remain a long-range goal of the program.

Conclusions and Recommendations

This project has been successful in meeting some of its stated goals. The counselors have made an impact by expanding the service provided to the job-bound youth. While it is anticipated that these services will continue, a follow-up is necessary to insure their continuance. The impact and extension of these Junior Guidance Counselors seem to be facilitated through the services provided by the VICS project. This is particularly true in the areas of supportive information and dissemination. Expansion of placement services and parental involvement remains one of the efforts to be made in future programs.

PROGRAM FOR PREGNANT GIRLS
(CONTINUING EDUCATION PROGRAM)
Project Number 22

Project Area: Pupil Personnel

Project Director: Miss Helen Faust

Location: East Kensington Area

Number of Students Served: None

Official Proposal Number: 01-47/10-1304

Starting Date of Project: October, 1968

Category: Disadvantaged, Part B

The Project

The Continuing Education Program is a project developed to prevent a great loss of time in the girls' education during pregnancy.

This program assists girls in maintaining their school status during pregnancy with special emphasis being placed on meeting individual educational needs.

The scheduled center to be involved in this program will operate as closely as possible in relationship with the regular school(s) attended by the girls and in collaboration with community health and social agencies. Girls admitted to this program will remain on the roll of the sending school and will continue to follow the course of study begun in their regular school program. The project teachers will be responsible for reporting to schools the educational progress made by each girl attending classes at the Center.

Objectives

Objective 1. To enable pregnant school-age girls to continue their education during the last three or four months of pregnancy.

Objective 2. To enable school-age pregnant girls to acquire salable skills.

Objective 3. To enable school-age pregnant girls to acquire child-care training in preparation for paid positions.

Conclusions

The Continuing Education Program funded by the Vocational Education Act of 1968 has been unavoidably delayed for the 1971-1972 school year, as reported by the project director. Project personnel are still involved in the process of getting supplies and satisfying space requirements. Funds, however, have been requested for the coming 1972-1973 school year, expecting all of the unforeseen difficulties to have been resolved and all the equipment in this year's (1971-1972) budget to have been delivered.

CAREER GUIDANCE PROGRAM AT SOUTH PHILADELPHIA HIGH SCHOOL
(Project Number 23)

Project Area: Pupil Personnel

Project Director: Mr. Samuel Munder

Project Manager: Mr. Al Berman

Location: South Philadelphia High School

Number of Students Served: 120

Official Proposal Number: 01-47/10-1304

Starting Date of Project: September 1, 1971

Category: Part B - Disadvantaged

The Project

The Career Guidance Program was a joint project of South Philadelphia High School (SPHS) and Jewish Employment and Vocational Service (JEVS) which was coordinated by Division of Pupil Personnel and Counseling. The project was designed to help students make career decisions by giving them a battery of psychological tests followed by a discussion of the tests results.

Objective

The Career Guidance Program was designed to help non-college-bound students make appropriate career choices.

Observations and Findings

Approximately 240 students signed preliminary forms indicating their desire to be project participants. Of this number, approximately 120 returned completed preliminary forms to the project manager in time to be included in the project. The remaining 120 students were designated as a comparison group for the project.

The project students (P's) were tested in groups of approximately 25 with each P attending two testing sessions. The students were administered a battery of tests composed of Hackman-Gaither Interest Inventory, Employment Aptitude Survey Clerical Test, Thurstone Temperament Schedule (Personality Test), Flanagan Industrial Test (Aptitude Battery),

The Set Battery, which tests judgment and comprehension, mechanics, vocabulary, and arithmetic. When further testing was deemed necessary, additional tests (for example, the Otis Intelligence Test) were administered individually. Between sessions, all P's completed a questionnaire--half were given an adapted form of the Vocational Development Inventory (VDI) and the other half an adapted form of the Vocational-Educational Survey (V-ES). The comparison group was divided and completed the questionnaires similarly.

Following the testing sessions, a SPHS counselor met with JEVS personnel. Using the results of the tests, the student's school record, and previous test scores appearing on the student's cumulative record, the group developed a list of recommendations for each P. The recommendations involved vocational areas the student could consider, the education involved, and various jobs within that area. The counselor did not tell the student that any job was an impossibility; rather, the counselor offered suggestions of courses that might be followed. If a student had decided to attend college and the counselor felt that choice was inappropriate, he explained to the student how the student's abilities compared to college students in general. No pressure was ever exerted on the student to follow the counselor's advice. The recommendations were discussed with each P in private sessions in the counselor's office. After all the P's were presented with the recommendations, both the P's and the comparison group were administered either the VDI or V-ES. Students were administered the instrument they had not taken previously.

Table 1 shows the mean scores for both groups on the VDI pretest and VDI posttest.

TABLE 1

MEAN SCORES ON VDI

Group	Pretest	Posttest
Project Students	33.8542	34.0909
Comparison Group	30.1273	32.2059

The results of the V-ES were analyzed differently, since total score has less meaning on the V-ES than on the VDI. For the first 20 questions of the VDI, students checked off the items which described something they had done. The differences between the per-

centage checking the item in the posttest and the percentage checking the same item in the pretest were computed for the P's and for the comparison group. Thus, for item 1 of the V-ES, the percentage of P's checking "considered several different kinds of jobs I for which 1 can apply" increased 12 percentage points, from 74% in the pretest to 86% in the posttest. The comparison group changed 20 percentage-points. Thus, the comparison group's increase was 8 points more than the Ps's increase. On the first 20 items of the V-ES, the P's had greater percentage-point gains than the comparison group on 11 items, and lower on nine items.

Table 2 shows the items on which the differences in percentage-point gain were greatest, referring to things the respondents had done.

TABLE 2

ITEMS ON WHICH DIFFERENCES BETWEEN GAIN SCORES WERE GREATEST
(V-ES, ITEMS 1-20)

Ps' gain > Comparison group's gain	Comparison group's gain > Ps' gain
20. Saved money to pay for my expenses while I am waiting to be hired.	11. Read many newspaper help-wanted ads about these jobs.
2. Chosen the jobs I can get	3. Taken school subjects which are related to these jobs.
18. Made a schedule which I will follow when I go job-hunting.	4. Found out the companies where I should apply for work.

Results for items 21 through 70 were analyzed similarly. Because there were four alternatives to each item, the analysis collapsed alternatives A (I have thought about this and know exactly where I stand) and B (I have thought about this and have a general idea where I stand) into the category "generally sure (S)" and collapsed alternatives C (I have thought about this, but I'm still unsure of where I stand) and D (I haven't thought about this) into the category "generally unsure (U)". Thus, it was possible to calculate the percentages of students generally sure about each item in a way similar to the analysis of the first 20 items.

On these 50 items the P's had gain scores greater than the comparison group on 36 items, lower on 11 items, and the same on one item.

Table 3 shows the items for which the differences in percentage-point gain were greatest, referring to matters about which they were "generally sure."

TABLE 3

ITEMS ON WHICH DIFFERENCES BETWEEN GAIN SCORES WERE GREATEST
(V-ES, ITEMS 21-70)

Ps' gain > Comparison group's gain	Comparison group's gain > Ps' gain
64. How long it will be before I get married.	52. Whether or not I give up more easily than others when I have a difficul' job to do.
55. Whether I am smarter than, as smart, or not as smart as most people my age.	58. Whether or not I daydream more than most people.
56. Making up my mind and carrying out decisions without help.	65. The kind of house or living quarters I would like to have some day.

Conclusions and Recommendations

It may be too soon to evaluate the effects of the project. Further evaluations will be carried out in subsequent years. As Isaacson (1971) observed, "one of the most frequent errors committed by counselors has been the failure to recognize the concept of vocational development as a long-range, continuous process (p.533)."

Another of Isaacson's observations helps put into perspective the project's objectives.

"The problem of inappropriateness (of a career decision) is especially vexaticus, since the counselor must recognize that, in the last analysis, this is a diagnosis which he can rarely make with certainty; the nearest that he can usually come is to use a modifier such as "apparent." Exact diagnosis, even were it necessary, is not possible now and likely never will be, because our instruments for psychological evaluation are not precise enough to give us a specific and pinpointed description of the various characteristics of every individual. Secondly, the various occupations have enough individual difference to accommodate a wide range of human difference. Finally, we do not yet know enough about any occupational field to be able to list completely and exactly which personal qualifications are absolute essentials for success in that field. In most situations, the best that the counselor can do is to make a prediction based upon actuarial data. Even if the figures indicate that the chances are only five in one hundred for success, the counselor must still face the fact that this particular client may be one of those five.

"The counselor's responsibility is not to save the client from what appears to him to be a mistake. He does, however, have the responsibility to help the client obtain all the information he needs to make the best possible decision. After that has been done, the client, as a free individual, has a right to whatever decision he makes (pp.542-543)." Using such a philosophical base, it would have been inconsistent to evaluate the project by finding out how many students followed the counselor's recommendations.

The project was originally proposed because students in Philadelphia historically do not receive feedback from standardized tests. While it is not yet known if the extensive battery of tests administered in the current project will have an effect on the students' future careers, another question should be answered. Considering the importance the JEVS personnel placed on information available to school personnel, why do the school personnel not disseminate the information to the students as a regular practice? In specific cases, such as exact intelligence test scores, the information deserves being withheld. But what is the reason for impeding a child's decision-making process by withholding useful information from him?

Another criticism of the project is that the tests were hand-scored. Time and money could have been saved by scoring the tests by using school system hardware. Time is especially valuable when it is realized that learning theorists agree that immediate feedback is most effective for the learning process.

PRE-APPRENTICESHIP PROGRAM
(Project #25)

Project Area: Career Development

Project Director: Mason Moton, Larry Chialastri

Projec· Manager: Bill Roth

Location: Mastbaum Area Vocational-Technical School

Number of Students Served: 22

Official Proposal Number: 10-1332

Starting Date of Project: September, 1971

Category: B, Disadvantaged

The Project

The Pre-Appl..nticeship Program was designed to place graduating high school students into industry or apprenticeship programs related to carpentry. Screening tests determined the 22 students who were accepted into the program. Following selection into the program, those students chosen from ninth-grade students in the public and parochial high schools in the vicinity of Mastbaum Area Vocational-Technical School (MAVTS) received instruction at MAVTS. The content of the course was established by the Joint Apprentice Committee and the School District of Philadelphia.

Objectives

1. The Pre-Apprenticeship Program will enroll approximately 22 students who will, upon completion of the three-year program, be eligible for entrance into Carpenter's Apprenticeship Program.

2. At least one-third of the students are to be black or Puerto Rican.

3. Union and labor will assist in the curriculum construction.

Observations and Findings

The first phase of the project involved the selection of the

project students. Preliminary plans indicated that the 32 students scoring highest on tests administered by the Pennsylvania State Employment Service would be selected for the project. The sample chosen was not found to be conforming to the guidelines of the project, e.g., one-third of the students were not black or Puerto Rican. A second phase of testing, which concentrated on predominantly black schools, provided a racially balanced sample. Tables 1 and 2 show the results of the preliminary testing.

TABLE 1

1971 Carpentry Testing
Public Schools

(Ninth-Grade Students)

SCHOOLS	APPLIED	TESTED	WHITE	BLACK	TOP 32	WHITE	BLACK	ACCEPTED	PERCENTAGE
Cook J.H.S.	18	10	5	5	2	1	1	1 (B)	20%
Fels J.H.S.	25	18	17	1	10	9	1	3 (W)	55½%
Harding J.H.S.	13	13	10	3	0	0	0	1 (B)	0%
Jones J.H.S.	28	17	15	2	2	2	0	1 (W)	11 3/4%
Lincoln H.S.	4	3	3	0	0	0	0	0	0%
Penn Treaty	5	2	0	2	0	0	0	0	0%
Stetson J.H.S.	33	22	8	14	3	3	0	2 (W)	13½%
Wanamaker J.H.S.	17	13	0	13	0	0	0	0	0%
Washington H.S.	6	2	2	0	1	1	0	0	50%
Wilson J.H.S.	0	0	0	0	0	0	0	0	0%
	(149)	(100)	(60)	(40)	(16)	(16)	(2)	(8)	
Second Testing									
Gillespie J.H.S.	6	6	0	6	0	0	0	0	0%
Wanamaker J.H.S.	6	6	0	6	2	0	1	1 (B)	33 1/3%
Dobbins	4	4	0	4	2	0	2	2 (B)	50%
Stoddart-Fleisher	5	5	0	5	1	0	1	1 (B)	20%
FitzSimons	6	2	0	2	0	0	0	0	0%
Vaux	4	4	0	4	1	0	1	1 (B)	25%
	(31)	(27)	(0)	(27)	(6)	(0)	(5)	(5)	
TOTALS	180	127	60	67	24	16	7	13=6 (W) 7 (B)	

TABLE 2

1971 Carpentry Testing
Diocesan High Schools

(Ninth-Grade Students)

SCHOOLS	APPLIED	TESTED	WHITE	BLACK	TOP 32	WHITE	BLACK	ACCEPTED	PERCENTAGE
Dougherty	21	14	14	0	7	7	0	4	50%
North Catholic	15	11	11	0	4	4	0	4	36%
Ryan	11	8	8	0	3	3	0	1	37%
Roman Catholic	5	4	4	0	0	0	0	0	0%
Father Judge	2	2	2	0	0	0	0	0	0%
TOTALS	54	39	39	0	14	14	0	9	

In September, 1971, the course in pre-apprentice carpentry began. On the visits to Mastbaum, certain patterns were observed in each class period. Each lesson was presented in two parts--theory and practice. The teacher lectured for the first part of the period, and then the students were eager to finish that day's work, because the activity for the afternoon included a strike.

Organized into work gangs, each student participated in the actual construction work. No one avoided working and students freely criticized each other's work. Although slipshod work was not tolerated by other students, criticism was not derogatory.

Below is a partial listing of the readings covered in the project:

Man and Technology

Selecting a Site

Buying Real Estate

Refining Ideas

Contracting

Estimating and Bidding

Handling Grievances

Mixing Concrete

Erecting Steel Frames

Installing Heating, Cooling, and Ventilating Systems

Making Inspections

Insulating

There were 177 other readings in the project. One major topic during the year was the building of modules. Each work gang of four or five students erected a five-foot-high scale model of three walls, a roof, and outlets for utilities. The work involved drawing plans, measuring, and many of the topics learned in the readings. Another topic was the drawing of a "dream house" of which the students then made small models.

In June, the teacher administered a final examination to measure the students' retention of material covered in class. The average score was 72 correct out of 103 items for a score of 70%.

The grades on the students' report cards are listed in Table 3.

TABLE 3

REPORT-CARD GRADES

Grades	Number of Students Receiving Each Grade	
	Second Report	Final Report
A	7	8
B	8	9
C	3	1
D	2	1*

*Student was absent for seven weeks because of illness. Teacher called him a "B" student.

The number of students decreased from 21 to 20 during the project because one student changed schools and was attending a parochial school which did not have a shared-time program.

Attendance during the project was approximately 97%. This figure becomes more impressive when it is realized that some students were on shared-time programs with parochial schools and traveled distances each day. On days when the parochial schools were closed, attendance was required at MAVTS.

Conclusions and Recommendations

The teacher and principal were enthusiastic with the program. The principal said that the project's success is a result of the students' motivation. The students knew a job awaited them in three years; the students knew they were a special group being watched by outside groups; the students had a teacher with considerable construction experience who made each lesson relevant.

The objectives were met. Twenty students are enrolled in the project; seven of the students are black. The students are using texts approved by union and labor leaders on the Advisory Council. The students completed the first year's work according to schedule.

The project is raising other questions, though, as well as providing some answers.

A report prepared by three Pre-Apprentice Coordinators in July, 1971, raises some of the questions:

"A scrutiny of most schools indicates that for the most part we prepare for the college-bound, while the majority of inner-city youths will not attend college and should be preparing for a work role.

"Another disturbing fact is evidence that certain schools are not preparing students as well as others located in the same district, and schools that educate minority students are falling far short in this area.

"Why should thirteen students out of eighteen from Fels Jr. High School pass this test and three students out of twenty-two from Stetson Jr. High School pass this test, while at Wanamaker Jr. High School, nineteen students were tested and not one passed?

"As a result of racial imbalance, additional testing had to be added; schools selected in other areas were Stoddart-Fleisher, Gillespie, Vaux, Dobbins, and FitzSimons to recruit more black students. Most of the additional students recruited had A and B averages (according to records, report-card marks, and counselors' remarks), yet they did very poorly in all phases of these tests.

"Why should there be a great variation of students' marks in the same school district? Could it be in some schools, teachers are giving marks for which they have no basis and developing false impressions to these students?

"How can we, as a team, correct these problems of different course content, philosophy, motivation, and attitudes?

"Since the final goals in any vocational program must be jobs upon graduation, we must strive to answer these questions."

Quoting an editorial in the Evening Bulletin:

"Instead of turning youngsters away from its apprenticeship program, the carpenters' union in Philadelphia has found a way to guarantee two dozen ninth graders jobs and training as carpenters three years before they leave the city's schools.

"Too many high school graduates, the carpenters found, were being rejected as apprentices because they lacked basic skills needed to pass an entry exam. The schools' failure to turn out more youngsters amply qualified for a trade or other work is a serious problem. The carpenters decided to do something about it.

"Working through vocational advisers in the public and parochial schools, the union hand-tooled a special course that amounts to taking a high school major in carpentry. In addition to the normal studies for a diploma, it added a lacing of shop math and English along with woodworking.

"School officials are hoping to launch similar "prep courses" in other trades. There is no reason why the approach might not be extended almost to any field where specialized skill training is necessary or valuable.

"The 22 youths in the carpentry course are assured of jobs in the trade. Schooling for them has a definite goal and enhanced meaning.

"The Metropolitan District Council of Carpenters is to be commended for helping to bring the schools into more direct contact with the workaday world."

BOEING/GRATZ PROJECT
Project Number 28

Project Area: Vocational Education - Industrial Arts

Project Director: Dr. William Kelly

Project Manager: Mr. Sam Thomas

Location: Gratz High School

Number of Students Served: 500

Official Proposal Number: 01-1191

Starting Da e of Project: September, 1971

Category: Part A, Disadvantaged

The Project

During the 1971-1972 school year, Boeing Company and Gratz High School worked together to accomplish two objectives at Gratz. These were (a) to help provide means of financial assistance to students in need of su:h assistance and (b) to improve vocational education and guidance programs at the school.

In addition to the manager, who is a Boeing employee, the project personnel included a job developer and secretary/bookkeeper--both School District employees. The manager was to coordinate all jobs to which students were referred by the job developer, as well as supervise efforts toward improving vocational education programs at Gratz. The improvement program consisted of two elements: (a) to rewrite existing vocational curricula using industrial criteria and (b) to increase the vocational guidance abilities of Gratz faculty members by providing them with on-site industrial experiences.

It was the job developer's responsibility to obtain part-time employment for students. Follow-ups on short-term placements (six weeks or less) were handled by the job developer; those for longer-term placements were handled by work-experience coordinators and counselors at Gratz.

Boeing consultants were to work on curriculum development with Gratz teachers. Together, they were to revise existing lessons, or design new ones, in concert with the industrial education facilities (e.g., machines, tools) available at the school.

To familiarize teachers and counselors with industrial personnel practices, Boeing sponsored an industrial "work" experience for several faculty members during the summer of 1972.

Objectives

1. To provide financial assistance, through part-time job placements, to Gratz students in need of such assistance.

2. To develop vocational curricula, using industrial standards, for use in Gratz High School Vocational Education classes.

3. To provide Gratz faculty members with a summer work experience in local business and industrial organizations.

Observations and Findings

Objective 1, to provide part-time jobs for students in need of financial assistance, was achieved.

As Table 1 shows, almost 400 (duplicate count) job placements were made through the Boeing/Gratz Project between September, 1971, and June, 1972. Table 1 reflects the number of placements made, but not students placed, during both the school year and the summer. Many of those placed in after-school jobs during the year were later placed in full-time or summer jobs with different employers.

TABLE 1

JOBS DEVELOPED THROUGH THE BOEING/GRATZ PROJECT
FOR GRATZ STUDENTS - SEPTEMBER 1971 THROUGH JUNE 1972

TYPE OF JOB	PLACEMENTS (DUPLICATE COUNTS)
After-school jobs	
Short-term	146
Long-term	80
Summer jobs	97
Full-time jobs (seniors)	70
Total	393

Placements were made in a variety of work situations. These included manufacturing firms (30%), retailing firms (30%), and service and maintenance firms (20%), with the remaining 20% divided among banks, insurance companies, community agencies, hospitals, and educational institutions.

Objective 2, to develop vocational curricula using industrial standards, was only partially achieved. Boeing consultants evaluated Gratz's machine-shop facilities as being suitable for developing salable skills. Attainment level checklists in three machine-shop skills were developed by Boeing. The three skills were: (a) milling machine operation, (b) lathe operation, and (c) sheet metal assembly. Each of these checklists stresses the need to read and follow directions, measure, and compute, in addition to the task requirements specific to each skill. The provisions listed on the checklists, which are on file in the Office of Instructional Systems Research, were to serve as the basis for a joint curriculum-development effort by Boeing and Gratz personnel.

Two industrial firms, in addition to Boeing, were originally expected to participate in the curriculum-development phase of the project. According to the manager, however, these firms withdrew their support late in 1971. Consequently, Boeing, as the sole industrial representative, did not begin working on this phase until early in 1972. A joint effort between Boeing and Gratz personnel was not undertaken at all in this area.

Objective 3 was to provide Gratz faculty members with a summer work experience in local businesses. Although this program was originally scheduled for the summer of 1971, it did not become effective until the summer of 1972. In order to familiarize participants with personnel practices and labor requirements of local industry, seven teachers and counselors, compensated for their time by Boeing, spent four weeks in the personnel departments of six Philadelphia firms. These were (a) Insurance Company of North America, (b) Philadelphia Naval Shipyard, (c) Bell Telephone, (d) Travelers Insurance Company, (e) Provident National Bank, and (f) Atlantic-Richfield Company.

In the light of their experience, the participants are expected to draft a series of recommendations, to be presented to the Gratz administration and faculty, for curricular revisions addressed to the needs of industry for skilled entry-level workers.

In addition to the three major objectives, Boeing provided direct financial assistance to Gratz students for auxiliary services. As an incentive for those students who might otherwise not pursue college or vocational goals, and who could not afford to register for testing, Boeing financed the costs of college entrance and vocational aptitude examinations. Boeing also provided carfare for transportation to and from these examinations, and paid for tutoring for those students who needed help academically.

Conclusions and Recommendations

During 1971-1972, the Boeing/Gratz project had its greatest impact in providing jobs and other types of financial assistance to Gratz students. Almost 400 (duplicate count) full- and part-time job placements

were made. Over $1600 in direct aid went to pay the costs of tutoring, bus tokens, and fees for specialized college and vocational tests.

Limited progress was made on the curriculum-development phase of the project. Because of delays, no achievement in this area was made until late in the school year. In order for any benefit to be derived from Boeing's initiative in providing job checklists, a cooperative curriculum development effort by Boeing and Gratz personnel will have to be undertaken early in the coming academic year.

The faculty work experience, originally scheduled for summer 1971, was in progress at the time of preparation of this report. According to the project manager, seven Gratz personnel have been assigned to six local business firms for a four-week training experience.

Although considerable initiative to implement the project's objectives has been demonstrated by both Boeing and Gratz, it appears that an even closer working relationship must be established between the two institutions if total success is to be achieved. This observation is made with particular regard to the need for a closer relationship between Boeing and the Gratz Industrial Arts Department if a new curriculum is to be developed.

CURRICULUM MATERIALS DEVELOPMENT
(Projects #30, 31, 32, 33, 38)

Project 30	Entry-Level Clerical
Project 31	Nurse's Assistant
Project 32	1. Service Station Attendant 2. Apparel Repair and Alteration
Project 33	1. Appliance Repair 2. Automotive Body and Fender Repair 3. Shoe Repair 4. Millwork and Cabinet Making 5. Power Sewing 6. Graphic Arts 7. Commercial Arts 8. Upholstery
Project 38	1. Automotive Industries 2. Textile Production

Project Area: T & I, Special Education

Project Director: Marechal-Neil E. Young, Will Rudder

Project Manager: Martin Freedman

Location: Kennedy Center

Official Proposal Number: 0-35/10-1303
0-37/10-1303

Starting Date of Project: February, 1972

Category: B, Handicapped

The Project

The five Curriculum Materials Development (CMD) projects listed above were joint projects of Special Education and Vocational Education except for Entry-Level Clerical Jobs, which was a joint project of Special Education and Business Education.

Thirty-five curriculum writers were split into groups of approximately four, and each group developed units for a specific curriculum area. A supervisor handled the administrative chores of the projects; a consultant instructed the writers in the instructional systems design approach by which the writers created the curriculum materials. In addition to the units each group wrote, multimedia materials were also developed.

Objectives

Writers will create materials for use by handicapped learners which employ instructional systems design concepts. The materials also will be adaptable to Personalized Instruction.

Observations and Findings

Eighteen visits were made to the CMD projects. The sessions on Saturday morning consisted of the consultant's presenting lectures on the systems approach followed by the participants' creating materials according to the approach. Topics covered in the lectures included "Terminal Performance Objectives," "Writing Criterion-Test Items," "Selecting the Correct Medium," "Hierarchy Charts," "Problems Associated with Retarded Students," and "Sequencing Instruction."

The consultant stressed that the materials must be created in small increments and that the writers must decide upon the behavior that the student will display.

The approach toward curriculum writing developed by the consultant conformed to the principles set forth by many authorities in the field. According to Tyler (1949);

"There are four fundamental questions which must be answered in developing any curriculum and plan of instruction. These are:

1. What educational purposes should the school seek to attain?

2. What educational experiences can be provided that are likely to attain these purposes?

3. How can these educational experiences be effectively organized?

4. How can we determine whether these purposes are being attained? (p. 1)."

Loughary (1966) asserted, "As increasing amounts of carefully designed and validated materials become available, teachers will become more aware of the deficiencies in the older, more haphazard approach to instruction....Certainly a methodology that eliminates...a tragic waste of human time and effort will find increasing acceptance at all levels of education (pp. 71-72)."

Briggs (in Knirk and Childs, 1968) outlined the steps to take in deciding upon which medium to use in each lesson:

"There are several indications that a need exists to overhaul the procedures by which instructional materials are prepared and made available for presentation via the various media. First, teachers are often bewildered by the proliferation of media in which the same subject matter is available for use in instruction....

"In sum, better techniques are needed for matching media with objectives before the materials are prepared in the various media. (The curricula in the CMD project were developed using such a chronological order.) Accomplishing this, at least for newly developing curricula, should not only result in more effective instruction but should also make more economical the plans for teaching the increased amount of knowledge which must be acquired by the students of tomorrow (pp. 61-62)."

Taba (1962) offered several rules for establishing curricular objectives:

"A statement of objectives should describe both the kind of behavior expected and the content or context to which that behavior applies (p. 200)."

"Complex objectives need to be stated analytically and specifically enough so that there is no doubt as to the kind of behavior expected, or what the behavior applies to (p. 201)."

"Objectives should also be so formulated that there are clear distinctions among learning experiences required to attain different behaviors (p. 202)."

"Objectives are developmental, representing roads to travel rather than terminal points (p. 203)."

"Objectives should be realistic and should include only what can be translated into curriculum and classroom experience (p. 204)."

"The scope of objectives should be broad enough to encompass all types of outcomes for which the school is responsible (p. 205)."

Taba (1962) outlined the steps involved in the development of a Teaching-Learning Unit. The steps include diagnosing needs, formulating specific objectives, selecting content, organizing content, selecting and organizing learning experiences, evaluating, checking for balance and sequence.

McNeil (1971) provided another use for the CMD materials. In his description of Sorenson's (1967) study of practice teaching, he noted that Sorenson asked 163 student teachers to "'list the things you would tell your best friend to do in order to get a grade of "A" from your present training teacher.' The responses indicated that a high rating was perceived as more dependent upon (1) doing as one was told; (2) fawning or cultivating the supervisor (having coffee with her and saying things like, 'I think that was a very good idea, Mrs .....'); (3) preparing lesson plans in advance; (4) keeping absolute control of the class at all times; (5) using an inductive approach in teaching; (6) giving extremely explicit directions; and (7) being original. Sorenson's data seem to support the following generalization: Sources most likely to yield information about the ultimate measure of the teacher's effectiveness--impact upon the student--are least likely to be used (p. 9)." Materials created during the CMD projects are easily adaptable to a system of supervision which emphasizes what students can do rather than how much the supervisor likes the teacher as a person.

The units which were created contained a task analysis for the teacher's use, which includes the following:

1. The terminal behavior that is desired;

2. A hierarchy chart which lists the prerequisites needed for that unit;

3. A microdiagram of the task analysis which shows pictorially the routes to be taken to reach the terminal behavior;

4. A pretest whose functions include teaching, counseling, and prescribing.

In addition, units contain a chart which categorizes the behavior which is changed in each unit. Divided into cognitive, psychomotor, and affective areas, behavior is further subdivided into sixteen subcategories. The time which should be spent on each segment is listed, and tests have been developed for each unit.

Since unit sizes vary and since varying amounts of multimedia materials were developed for each unit, it is misleading to compare the number of units for each curriculum area. Generally speaking, each group developed approximately 15 units. A sample unit for clerical occupations is attached.

Because the project did not start until February, 1972, it is assumed that more materials could be developed in subsequent years. The participants had to learn a new technique in a limited amount of time.

Conclusions

The five CMD projects had developed materials which are unlike conventional materials used with handicapped learners. The teacher who uses the materials decides precisely what he wants the learner to accomplish. The focus of each lesson is not "What did the teacher teach?", but rather "What can the learner do?" The teacher cannot proceed beyond material the student has not mastered.

More time is needed to validate the materials. By using the materials on a small number of students, the teacher can discover segments which are inappropriate or inefficient. Because the project did not start until February, 1972, there was not time for extensive validation. The materials which were validated were found to be suitable to the students sampled and in each case the objectives of the lesson were met.

The project supervisor said that a resolution calling for increased spending for the project was rejected by an administrator. The passing of that resolution, the supervisor said, would have increased the amount of materials and would have enabled the materials to be packaged in a professional way increasing the likelihood of their use.

Supplementary Data

See attached memorandum and the five-page illustrative lesson plan appended to it.

THE SCHOOL DISTRICT OF PHILADELPHIA

MEMORANDUM

TO	NAME AND OFFICE Dr. Kelly, Voc. Ed. Mr. W. Rudder	Dr. Young, Spec. Ed. Dr. Powell	Marty Freedman Pam Smith	FILE NO 430
FROM	NAME AND OFFICE Stuart Hoffman			DATE May 15, 1972 SENDER'S TELEPHONE 448-3735

SUBJECT: CMD Program of Special Ed. and Voc. Ed. Monitoring and lesson plan

The evaluator monitored the first validation exercise for materials developed during the Curriculum Materials Development (CMD) Program of Special Education and Vocational Education.

Briefly, validation is the process of tryout and revision of materials. Before materials can be used in a classroom setting, they must be tried out on a limited number of (2 to 5) students. The feedback which the teacher gets from the students using the materials eliminates problems prior to classroom use.

The enclosed lesson plan provides an idea of the lesson which was presented. Because of the hearing handicaps of the learners, the teacher, in this lesson, could not use media appropriate for students with different handicaps. The salient feature of the lesson, though, is that an objective for the lesson was formulated, and that objective was reached.

The feedback which the teacher received made her feel that in a larger class

1) a skit prolonging the role-playing situation would be appropriate; and

2) a hand-out of a map showing work stations could be used in which students could draw the routes they would follow.

SH/mp
Enclosure

LESSON PLAN

The following lesson represents the first learning module for training students to perform the duties of an interoffice messenger. It has been developed by the curriculum writers for handicapped children in the area of clerical occupations.

Objective: The student will be able to act as a messenger by receiving an assignment, either verbally or written from the boss. He will then repeat the assignment back to his boss, in his own words, to demonstrate his understanding of it. This will be done in a period of no more than 2-3 minutes with a criterion for accuracy of 100%.

Readiness: Our class visited the Social Security Building at 401 N. Broad St. to see a messenger performing his job. Following the trip, we held a class discussion about what we had seen.

Sequence

1. Pretest to determine what working knowledge, if any, is known about a messenger and how he receives his daily assignments.

   The pretest is visual in nature and consists of three questions.

   Question #1

   Directions: Write the correct word in the blank space.

   Messenger is receiving his _____ from his supervisor (boss). Ans. Assignment

   *Note: the transparency for this first test question shows a supervisor giving a paper to the messenger.

   Question #2

   Directions: Same as above

   In order to understand his assignment, a messenger must first _____ it. Ans. Read

   *Note: the transparency for this second question shows a messenger with the assignment.

Question #3

Directions: Fill in the blank.

To make sure he understands his assignment, the messenger should _____ the assignment to the boss in his own words. Ans. Repeat

Note: the transparency depicts a messenger with his boss. The messenger is telling the boss where and what he understands his assignment to be.

2. Definition of a messenger. There is a flashcard with the vocabulary word and definition.

Question

Can you think of someone who does the same job as a messenger? He does this job outside and stops at your house each day.

Ans. Mailman

3. Explanation of how a messenger knows what his job for that day is to be.

Question

Who tells the messenger what to do? How does the messenger know where to take letters or what job he should do each day?

Ans. Boss (supervisor) *Display transparency of boss giving assignment to messenger.

4. Ways a messenger can receive his assignment. (Define assignment) Flashcard

   a. Telephone
   b. Notes
   c. Verbally

*At this point, display the transparency with the boss giving a written assignment to the messenger.

5. Different places a supervisor can ask the messenger to deliver letters and packages.

   a. to people
   b. to file baskets
   c. to mail boxes

6. Role playing. One student to be a messenger. The teacher will be the supervisor. Assignment is for the student to take the letters the teacher gives her to Station #1. (Stations have been posted within the classroom). Before the student can proceed with his assignment, he must demonstrate his understanding of it.

7. Role playing. Another student will be the messenger while the teacher remains the supervisor. The assignment is for the student to go to Station #4, get all the letters from the file basket located there. She is to take these letters and place them in the file basket at Station #1.

   *Note: During the role playing, signs will be placed on both the supervisor and messenger, stating their roles.

   Before the student leaves to complete the assignment, he must tell his supervisor the assignment as he understands it.

8. Role Playing. This time, two students will assume the roles of supervisor and messenger. The students will put on their respective signs. Assignment #3 is for the messenger to get the papers in the file box at Station #3 and put the papers on the classroom teacher's desk.

   *Note: the teacher should remain quiet here to see if the students will remember that the messenger must repeat the assignment in her own words, to the supervisor.

9. Role Playing. Make the assignment a written one this time. Again, two students should assume the roles of supervisor and messenger. The assignment will be to go to the closet and bring the package on the chair inside the closet to the supervisor. Before the messenger leaves, she must repeat the assignment back for total comprehension.

10. Review.
    a. Related vocabulary--supervisor, messenger, assignment, station

    b. Questions:

       1. Who were the supervisors in class today?
       2. Who were the messengers in class today?
       3. After the supervisor gives the messenger an assignment, what should the messenger do before he goes on the assignment?

11. Follow-through.

Question

When a messenger goes on an assignment, he doesn't always have one or two places to go. He has many places to go to and many letters and packages to carry. How will he carry all the packages? Ans. cart, bag, other people to help

*Note: What is being attempted here is to lead into the following lesson which deals with the messenger cart.

12. Posttest.

Question #1 (fill in the blank)

In order to know where to deliver packages, the messenger gets his _____ from his boss.

a. cart
b. assignment
c. pay
d. lunch

Ans. is (b) assignment

Question #2

In order to understand an assignment, the messenger must first _____.

a. write it
b. read it
c. get it
d. deliver it

Ans. is (b) read it

Question #3

To show that the messenger thoroughly understands his assignment, the messenger will _____.

a. deliver the package
b. write instructions
c. ask supervisor where package is to be delivered
d. tell supervisor, in his own words, where package is to be delivered

Ans. is (d) tell supervisor, in his own words, where package is to be delivered

Question #4

A messenger reads his assignment, repeats it out loud, and in order to make sure he understands where it is to be delivered, he _____.

a. delivers it
b. asks supervisor to go with him
c. in his own words tells the supervisor where to deliver the letters or packages
d. waits for the supervisor to tell him where to deliver the letters or packages
e. refers to the delivery instruction manual

Ans. is (c) in his own words tells the supervisor where to deliver the letters or packages

*Note: the post test here may be substituted with one similar to the more visual one of the pretest.

Materials

1. Overhead projector
2. File baskets
3. Station signs
4. Supervisor and messenger signs
5. Vocabulary cards
6. Large placards with each assignment printed clearly
7. Related transparencies

CURRICULUM MATERIALS DEVELOPMENT--CLERICAL OCCUPATIONS
Project Number 37

Project Area: Special Education/Instructional Computer Center/Business

Project Director: Hank Altschuler

Project Manager: Ellis Lasowick

Location: Instructional Systems

Number of Students Served: 15

Official Proposal Number: 0-33/10-1303

Starting Date of Project: September, 1971

Category: Part B, Handicapped

The Project

The Curriculum Materials Development (CMD) project for Clerical Occupations is a joint project of Special Education, Instructional Computer Center, and Business Education.

The development of curriculum material and its preparation for computer use are accomplished by a special staff consisting of authors who are responsible for developing the instructional program, and a programming group consisting of coder/programmers, typists, keypunch operators, and system operators.

Authors have used the "systems approach" in their materials. After revisions based on field testing, the authors forward the materials to the coder/programmers (CP's). The CP's then prepare the materials for the computer.

The project has developed materials which teach retarded educable students (RE's) to use a typewriter and a ten-key adding machine. The materials are used with a computer. Students' responses to questions determine the sequence of subsequent questions. The variable sequence of questions, called branching, enables the student to take remedial or enrichment work.

Objectives

The CMD project for clerical occupations is designed to assist RE students to develop salable skills in typing and ten-key adding machine operation.

Observations and Findings

The typing program has been tried out on two classes of RE's at John Bartram High School. The developmental frames were completed for 19 lessons, and remedial paths were completed for the ten-key adding machine. Managed by a central computer at the Instructional Computer Center, the program can be updated daily.

Problems connected with the project included changing the format of the lessons to facilitate their programming; writing instructions at the reading level of the students; finding a suitable population for the materials. Students with severe and multiple handicaps had such difficulty manipulating the apparatus, that less severely handicapped students were ultimately selected for the program.

Conclusions and Recommendations

The enabling objectives have been met. Because of the problems listed above, however, limited validation of the materials was carried out. During the next school year, the evaluation will investigate how the program compares to traditional typing programs. Teachers and students will complete questionnaires designed to show the degree to which the program is interesting and effective. Student achievement in typing will be compared to student achievement in traditional typing programs.

CURRICULUM MATERIALS DEVELOPMENT
COMPUTER-MANAGED INSTRUCTION--APPLIANCE REPAIR
(Project #39)

Project Area: Spec. Ed./Instructional Computer Center

Project Director: Henry Altschuler

Project Manager: Leon Shore

Location: Instructional Systems

Number of Students Served: 20

Official Proposal Number: 0-39-10-1303

Starting Date of Project: September, 1971

Category: Part B Handicapped

The Project

The Curriculum Materials Development (CMD) project for Computer-Managed Instruction (CMI) is a joint project of Special Education and the Instructional Computer Center.

In the appliance repair course, each student is given a printed outline from the computer terminal indicating the sequence of topics he is to follow and the teaching aids which he will use. The computer ties together various teaching media, including shop activity, into a structured entity. The computer pretests, analyzes results, and prints a learning prescription to fit the individual.

Objectives

The CMD Project is designed to create a course for retarded educable students (RE's) in appliance repair. The program is computer managed (i.e., the computer directs students to different tasks based on their previous performances). In addition, multimedia curriculum materials have been developed.

Observations and Findings

Two cathode ray tube terminals (CRT's) were placed in the Kane School in May, 1972. After "signing on" the CRT, the student is directed to a learning packet or a test. Following the lesson, the CRT can score the student's test and direct him to a learning packet.

The learning packets are on three levels:

1. Reading material, information and questions;

2. Taped information played on cassette recorders (for those who cannot read), and

3. Cartoon booklets of information for those having difficulty with the taped information.

The project supervisor has validated parts of the materials on four classes of 12 to 15 students. The students worked on the Hot Plate Unit which is completed. The Iron Unit is partially completed. The project supervisor anticipates the completion of units on hair driers, fans, toasters, small motor units, shavers, vacuum cleaners, and coffee makers in subsequent years.

Each unit has seven lessons managed by a central computer at the Instructional Computer Systems Center. The sixth lesson is a simulated type; the seventh lesson is a hands-on repair of the actual appliance with the teacher sharing the management of the student's activities.

The management program is complete. The record-keeping program is being updated for more complete printouts of daily and cumulative student, class, and school records and evaluations.

Conclusions and Recommendations

The enabling objectives have been met. Further evaluations will determine whether the students and teachers involved believe the CMI approach is superior to the traditional method. Questionnaires will investigate whether the CMI program is interesting. Standardized tests will be used to compare progress made by CMI and traditional pupils.

Students have expressed interest in the program in informal conversations with the evaluator. When working with the learning packets, the students are absorbed in the work. Since some students have great difficulty in reading, the teacher must help them with the reading packets. The same students, however, require very little assistance with the taped packets.

The program is easily changeable. For example, wrong messages on the CRT were corrected the same day in every case. When an error was detected in a reading packet, that error also was rectified the same day.

Although the program seems to be reaching its goals, there still is one question which must be answered clearly and directly. What is the market for people trained in small-appliance repair? With small electrical appliances being so inexpensive, is there a sufficient number of people who fix broken appliances?

A survey should be conducted to determine the specific jobs which will be available to students who complete the program.

ADAPTIVE INSTRUCTIONAL MANAGEMENT--SPECIAL (AIM-S)
(Project Number 40)

Project Area: Special Education/Instructional Computer Center

Project Director: Henry Altschuler

Project Manager: Charlotte Moskowitz

Location: Instructional Systems

Number of Students Served: 72

Official Proposal Number: 22-1071

Starting Date of Project: February, 1972

Category: Part B, Handicapped

The Project

AIM-S is a computer-managed program of individualized instruction designed to teach the basic skills to retarded educable males in order to bring the pupils to defined standards of educational mastery. The primary goal of the computer-managed instructional (CMI) system is to assure each pupil that level of mastery in communication skills and mathematics which would assure him success in the vocational courses of tailoring and restaurant practice.

The CMI system is comprised of three components: an evaluation system, a curriculum system, and a computer-based management system. The evaluation system includes a comprehensive battery of measures for the assessment of learner aptitudes and achievement. A formative evaluation component is included for a continuous review of curriculum development and implementation activities, as well as for providing continuous feedback on the utility of all assessment procedures. The curriculum system includes a structured bank of sequenced learning packets (materials and activities) which provide individualized instruction around defined objectives. The learning packets vary in three dimensions: reading level, presentation mode, and level of pupil/tutor interaction. The computer management system analyzes measured learning characteristics, achievement history, and present needs and interests.

Objectives

The overall objective of AIM-S is to develop a prototypic mode of individualized-instruction system of basic education for retarded

educable pupils in a vocational school setting. The process by which the model is to be developed encompasses the following:

1. The definition of learning characteristics;

2. The delineation of basic instructional objectives;

3. The training and guidance of school personnel in the (a) planning, design, and creation of individualized instructional materials, and (b) operation of CMI system;

4. The development of a formative evaluation system.

Observations and Findings (grouped under the four subobjectives)

Seventy-two RE students in four classes at the Carroll School began working with the program in May, 1972.

1. Learning characteristics

To insure the compatibility of the system, assessments were made to determine the learning styles of the students. Four instruments were used: (a) auditory measure -- a paired-associates test adapted for the retarded that measures auditory learning abilities, (b) visual measure-paired-associates test adapted for retarded that measures visual learning abilities, (c) memory for numbers -- an auditory measure adapted for the retarded that measures the learner's memory for numbers and (d) the Raven Progressive Matrices Test adapted for the retarded that measures the abstract learning ability of the student.

Two other factors were used. The reading levels were ascertained from the Behavioral Research Laboratory (BRL) reading achievement score. The measures of independence were determined by a joint judgment from a team comprised of teachers, a school psychologist, a school counselor, and the principal. Based on the result of these six components, the student's learning characteristics were classified to meet the first subobjective.

2. Basic Instructional Objecitves

To provide a diversified program of instruction, ten areas were identified for the initial project. The areas are IPI Center Orientation; Communication Skills; Arithmetic Skills; Social Skills Orientation; Health Habits; Tailoring; Food Service Orientation; General Shop Safety; Safety in the Tailor Shop; Safety in the Kitchen. From these ten areas, eighty-four terminal behavioral objectives have been delineated. Each of the objectives has been further subdivided into sub- or microobjectives Through this process, the groundwork for the planning and development of the curriculum system was provided. The tasks and accomplishments of these activities are listed in Table 1.

TABLE 1

ACCOMPLISHMENTS OF AIM-S

Task	Criterion	Accomplished
Basic Objectives		
1. Redefinition and clarification of existent behaviorial objectives	69	69
2. Definition of new basic skill objectives	20	23
3. Definition of occupational tasks	none set	61
Aptitude/Assessment Measures		
1. Rewriting existent measures	4	4
2. Development of original measures	none set	1
Instructional Materials		
1. Review of existent materials	75-80 packets	343
2. Survey of published materials	none set	continuous
3. Development and/or adaptation of new materials for the instructional system	50-70 packets	120

3. Staff Development

Creation of individualized learning packets. Teachers and the principal from the Carroll School met with selected staff members of the Division of Instructional Systems for training sessions in the development of an instructional system. These meetings centered around (a) the definition, preparation, sequencing, and assessment of terminal behavioral objectives; (b) the analysis of individualized learning packets and training in the preparation and development of such packets; and (c) the preparation of assessments for the evaluation of packets and stated behavioral objectives.

At these sessions instructional materials for AIM-S were prepared. The materials developed were aimed at three learning styles: (a) independent, individualized printed text at various reading levels; (b) independent printed materials accompanied by a verbatim cassette-taped presentation for those students who learned best through audiovisual approach; (c) tutorial mode utilizing either of the above materials in the presence of a tutor for those who learn best under some form of supervision and/or human interaction.

Operation of CMI system. Carroll School I. P. Center personnel were trained in the use of the computer-management component. Continuous contact was maintained by the technical personnel at Instructional Systems and the teacher and aide responsible for the smooth and efficient functioning of the I. P. Center. The Center supervisor at Carroll utilized the defined measures to make assignment of packets.

4. Formative Evaluation System

A preliminary work statement defining specific tasks included in the curriculum-development component was provided. The tasks and the associated criteria for their successful completion are listed in Table 1. The actual accomplishments of this phase of the project also appear in Table 1 and Table 2.

The results of the formative evaluation system showed that the necessary enabling objectives have been met. These findings are summarized in Table 2.

TABLE 2

FORMATIVE EVALUATION COMPLETIONS

Major Activity	Completed
1. Planning an instructional system	x
2. Staff development	x
3. Test-construction activities	x
4. Definition of instructional objectives	x
5. CMI system modification	
a. Identification of learning style measures (RDLC)	x
b. Instructional dialogue	Projected

Conclusions

The original project objectives are being accomplished. Since the starting date of the project was February, 1972, only a limited time was available for (a) training of students to work independently in the I. P. Center, and (b) the validation of the instructional materials. However, 26 students did complete 31 objectives and received certificates of achievement. Recommendations for the future include the development of more packets, and the validation of the instructional materials against the target population. It seems possible that AIM-S can serve as a model for special education students which could be absorbed into regular classes.

SPECIAL EDUCATION STAFF DEVELOPMENT
(Project Number 41)

Project Area: Special Education

Project Director: Lafayette Powell

Project Manager: Richard Robinson - Len Laskin

Location: Gratz High School

Number of Students Served: None, Staff Development

Official Proposal Numbers: 1-4/714-72

Starting date of project: June, 1972

Category: Part B, Handicapped

The Project

The School District of Philadelphia is now assigning many educable mentally retarded students to regular senior and vocational-technical secondary schools. The students meet with one teacher for basic skills instruction and then join in regular classes in other areas of instruction including vocational education classes. Presently there is great resistance on the part of regular school personnel including teachers and administrators toward acceptance of mentally retarded students into their classes. This strongly emphasizes the need to focus upon the secondary school environment in which these handicapped students are assigned. There is also great need for introducing these Special Education students who will be promoted into the senior high school from middle, junior, and special center schools to the vocational education programs available to them in their new school environment. This project was intended to be a five-day program including a morning vocational preparatory workshop for administrators, teachers, and two hundred students, and an afternoon seminar for the representative staff members and parents who will share in creating a desirable learning environment for handicapped learners.

Objectives

1. To provide opportunities for key staff members to meet and plan a sound environment for the education of handicapped students enrolled in regular vocational classes in the senior high and vocational-technical high schools. Five specific micro-objectives are (a) to

develop understanding of the kind of personalized instruction that should be provided for handicapped students in the various vocational areas; (b) to develop understanding of the handicapped child and his special needs; (c) to relate basic skills instruction to vocational education teachings; (d) to expose vocaticnally related academic teachers (teachers of Special Education) to relevant employment needs of the working world; (e) to provide participants with a better understanding of career-education development and basic skills-development techniques for handicapped students.

2. To demonstrate to teachers curriculum materials developed during the 1971-1972 school year for use by RE's.

Observations and Findings

Because of late confirmation of funding and because the Commonwealth's offices were closed as a result of flood damage, the project was reduced to a three-day workshop. Students could not be contacted in enough time to allow for the student component of the project; e.g., providing RE's with orientation to shops and regular school environments. In place of the student component. a more concentrated effort was made to provide teachers and administrators with information needed to reach the project's opjectives.

Teachers were divided into groups to develop school plans for dealing with RE's entering in the 1972-1973 school year, and lists of academic skills required for each vocational subject.

Teachers at times were divided according to schools. Discussion topics included individualizing instruction, diplomas for RE's, how to integrate RE's into the total school experience, whether or not to treat RE's differently from regular students, and job opportunities for RE's. When divided according to subject areas, similar topics were discussed. In meetings of all participants, guest speakers discussed ramifications of recent court decisions, solutions to everyday problems, and various theoretical issues.

Conclusions and Recommendations

Questionnaires were administered to the two groups at the conclusion of the project. Results are summarized below in Table 1. In summary form, the results indicate satisfaction with the project.

TABLE 1

CURRICULUM WRITERS' RESPONSES

Questions	Responses	Number of Responses
1. How many days have you attended?	Three	19
2. How did you learn of this staff development program?	Phone Call	9
	CW Program	7
	Notice at School	6
	Conversation	1
3. Would you be willing to participate in another similar program?	Yes	20
4. What do you feel has been most beneficial to you in this program?	New people/ideas	10
	Learned what REs were like	7
	Team workshops	1
	Work with students	1
5. What new ideas, facts, or understandings have you gained from participating in these staff development sessions?	Better understanding of 'special' children	17
	How to better motivate 'special' children	11
	How to implement my program to 'special' needs of these children	11
	That these children are like 'Normal' children in needs	15
	None	1
6. Before the program began, what did you hope to gain from it?	Curriculum ideas	16
	More insight as to how to work with 'special' children	13
	Motivational ideas	13
	Other	3
7. What were the best features of this program?	Diversity of backgrounds brought together	15
	Group interchanging of ideas	18
	Instructional demonstrations	5
8. Explain what new ideas you will introduce into your classroom to help handicapped students in the school year 1972-73	Individualized instruction	10
	Curriculum/Audio visual materials	5
	Other	4
9. Do you feel that your group sessions dealt with relevant topics?	Yes	18
	Sometimes	1
10. Group members spoke to the issue and made me more aware of how to enrich my role as a person working with 'special' children.	Very frequently	10
	Frequently	9
	Fairly often	2
	A few times	2
	Never	
11. What would you suggest could be retained?	All	5
	Format	3
12. What would you like to see done differently in future staff development programs?	More advanced notice	4
	Fewer speakers	3
	More units for classroom	3
	More experts from industry	2
	Nothing	1
	Other	6

TABLE 2

NONCURRICULUM WRITERS' RESPONSES

Questions	Responses	Number of Responses
1. How many days have you attended?	Three	97
	Two and a half	1
	Two	3
2. How did you learn of this staff development program?	Notice at school	95
	Conversation	4
	Another program	2
3. Would you be willing to participate in another similar program?	Yes	98
	Maybe	1
4. What do you feel has been most beneficial to you in this program?	Learned what REs are like	49
	New people/ideas	34
	Guest speakers	10
	Team workshops	8
	Group discussions	4
	Other	5
5. What new ideas, facts, or understandings have you gained from participating in these staff development sessions?	Better understanding of 'special' children	79
	How to better motivate 'special' children	39
	How to implement my program to 'special' needs of these children	57
	That these children are like 'normal' children in needs	64
	None	1
6. Before the program began, what did you hope to gain from it?	Curriculum ideas	56
	More insight as to how to work with 'special children	78
	Motivational ideas	52
	Other	2
	None	3
7. What were the best features of this program?	Diversity of backgrounds brought together	68
	Group interchanging of ideas	92
	Instructional demonstrations	9

TABLE 2 CONTINUED

8.	Explain what new ideas you will introduce into your classroom to help handicapped students in the school year 1972-73.	Individualize instruction	27
		Curriculum/A.V. materials	23
		Affective	19
		Techniques	16
		Other	5
		None	8
9.	Do you feel that your group sessions dealt with relevant topics?	Yes	92
		No	2
		Sometimes	3
10.	Group members spoke to the issue and made me more aware of how to enrich my role as a person working with 'special' children.	Very frequently	38
		Frequently	39
		Fairly often	16
		A few times	7
		Never	2
11.	What would you suggest could be retained for future staff development programs?	All	12
		Small groups	21
		Guest speakers	15
		Format	4
		Communication across areas	9
		Demonstrations	5
		More	5
		Other	10
12.	What would you like to see done differently in future staff development programs?	More advanced notice	6
		Fewer speakers	13
		More experts from industry	2
		Students	13
		More group sessions	11
		Demonstrations	20
		Longer sessions	3
		Other	20
		Nothing	8

What was not formally measured was the attitude of the workshop participants. It must be stated that the project managers conducted the project under adverse conditions and yet were able to create a congenial atmosphere which facilitated the meeting of the objectives. The number of complaints recorded in the questionnaires and in informal conversations with the evaluator were minimal. Most participants seemed eager to learn more about RE's. The project managers are to be commended for "rolling with the punches" -- for doing so much under such conditions.

STAFF DEVELOPMENT FOR TEACHERS OF SPECIAL EDUCATION
(Project Number 42)

Project Area: Special Education

Project Director: Dr. Lafayette Powell

Project Manager: Mrs. Deborah Stansbury

Location: Girls High School

Number of Students Served: None, Staff Development

Official Proposal Number:

Starting Date of Project: March 18, 1972

Category: Part B, Handicapped

The Project

This project was a Saturday morning staff development workshop for teachers of special education and those teachers who are in some way involved with "special" children.

Objective

To increase instructional effectiveness by means of successfully incorporating into the classroom situation an educational program equally beneficial for both "regular" and "special" students.

Current Evaluation Procedure

A descriptive evaluation was used to assess the project with respect to its goal.

The current evaluation was focused upon facilitating workshop experiences for school personnel so as to increase their instructional effectiveness in the classroom as teachers of "special" children.

Monitoring was done on each of the meeting days. At the beginning and climax of the staff development workshop, the Minnesota Teacher Attitude Inventory was administered. Finally, at the last session, the special education teachers were asked to respond to a questionnaire.

The Minnesota Teacher Attitude Inventory (MTAI) which was used in a pretest-posttest design is structured to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships, and indirectly, how well satisfied he will be with teaching as a vocation.

A t test for correlated samples was employed to evaluate changes in teacher attitude during the nine-week workshop. The methodology used in this study followed the same pattern as another study undertaken at Colorado State College of Education.

The Staff Development for Special Education Teachers Questionnaire was devised for the purpose of learning how the participants felt about the workshop.

Observations and Findings

The staff development workshop met for nine Saturdays from March 18 to June 3, 1972, for three hours each meeting. The group was divided into two sections, retarded educable and retarded trainable personnel. The retarded educable group was further subdivided into four sections according to the teachers' main field of work/concern.

Each Saturday after the initial main-body session, which usually entailed having a guest speaker, the groups would convene in their respective sessions and have discussions, presentations, project demonstrations.

The workshop met at the Girls High School with approximately 143 participants, of whom five were group leaders.

Observations on eight of the nine Saturdays indicated that, in all cases, major activities were being conducted to achieve the workshop objective. Teachers were actively involved in group discussions ranging from the necessity for teachers to clarify objectives to how important it is to involve parents of "special" children in order to arouse and stimulate parental concern. Another group attentively watched and later questioned as a fellow member presented a project on photography and the "special" student. In yet another session, the participants became quite reactive when a teacher presented an example of a "special" student who refused to wear his safety glasses in a shop class.

Results of the Minnesota Teacher Attitude Inventory (MTAI) were treated on a test-retest basis. Mean score on the pretest was 21.25; mean score on the posttest was 21.86. The gain of 0.61 was too small to be statistically significant when the t test was applied.

Teacher responses to the questionnaire about the workshop are shown (for 13 of the 22 items) in Table 1.

TABLE 1

TEACHER RESPONSES ON QUESTIONNAIRE

Question	Response	No. of Responses
How many of the sessions have you attended ?	1. 8	77
	2. 7	13
	3. 6	6
	4. 5	3
Would you be willing to participate in another similar program?	1. Yes	91
	2. No	7
	3. Maybe	3
What do you feel has been most beneficial to you in this program?	1. Field trip(s)	52
	2. Guest speakers	27
	3. Group discussions	26
What new ideas, facts, or understandings have you gained from participating in these staff development sessions?	1. Better understanding of "special" children	55
	2. These children are like "normal" children in needs	50
	3. How to implement my program to "special" needs of these children	41
	4. How to better motivate "special" children	36
	5. Other	25

TABLE 1 CONTINUED

What new instructional skills have you developed by having participated?	1. Resources/ Audio-visual	71
	2. Curriculum/ techniques	26
	3. None	8
	4. Affective	7
In what media do you need further instructions?	1. Programmed instructional materials	68
	2. Developing of cassette tapes	33
	3. Video tapes	26
	4. Transparencies	23
	5. Developing of slides	22
	6. Slide/tape presentations	21
	7. Reel-to-reel tape recorders	20
	8. Film strips	12
How have you used new ideas or skills in your classroom since your participation in the program?	1. Techniques	53
	2. None	17
	3. Affective	15
What were the best features of this program?	1. Group inter-changing of ideas	63
	2. Diversity of backgrounds brought together	40
	3. Instructional demonstration	28
	4. Other	14
What new ideas will you introduce into your classroom to help handicapped students in the school year '72-'73?	1. Techniques/AV	57
	2. Affective	13
	3. Curriculum	12
	4. None	11
What features of the program could be improved?	1. More variety of field trips	52
	2. Level of com-munication between speakers and group	43
	3. Lengthening or shortening of staff development program	28
	4. Other	25

TABLE 1 CONTINUED

What could be retained for future staff development programs?	1. Field trips	38
	2. Speakers	25
	3. Other	22
	4. Small groups	14
	5. Resource center	7
	6. All	5
What would you like to see done differently in future staff development programs?	1. Other	39
	2. Better speakers	8
	3. More field trips	7
	4. More concrete	7
	5. Lesson demonstrations	6
	6. Better planning	5
	7. Smaller groups	5
	8. Treat teachers professionally	5
	9. Separate cliques	5
	10. Teachers plan	3
Do you feel that your group sessions dealt with relevant topics?	1. Frequently	29
	2. A few times	26
	3. Fairly often	20
	4. Very frequently	19
	5. Never	4

Conclusions

The Staff Development Workshop for Teachers of Special Education met its objective to a large degree; however, to really measure the full impact of this experience, longitudinal studies would seem to be in order.

The teachers were actively involved in their group sessions with much to offer in terms of group interactions.

The MTAI results revealed that there were basically no significant attitude changes due to the workshop though the teachers tended to respond positively to the staff development workshop as demonstrated by their responses on the opinionnaire. The opinionnaire also revealed areas which need refining when one thinks in terms of future staff development sessions.